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mControl v2

(Home Edition)

User Manual

Digital Home Software

Revisions

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Introduction

This purpose of this document is to provide installation instructions for mControl home automation software from Embedded Automation (http://www.embeddedautomation.com).

mControl software allows you to control your home from the comfort of your couch or remotely from any internet access point.

System Requirements

Software Requirements

mControl has two main components. By default, they are installed on the same machine.

mControl (Automation) Service

- Operating System
  - Windows 2000
  - Windows XP Home Edition
  - Windows XP Professional
  - Windows XP Media Centre Edition 2005
  - Windows Vista
- Microsoft.NET framework version 2.0 (or higher)
  - To download visit: http://msdn.microsoft.com/netframework/downloads/default.aspx
- Microsoft MDAC version 2.7 (or higher)
  - To download visit: http://msdn.microsoft.com/ and search for "MDAC"

mControl (User Interface) Clients

- Windows Vista Media Center – using Media Center Presentation Layer (MCPL)
- Windows XP Media Center Edition (MCE) 2005 (including Roll-up 2)
- Windows Mobile
- Internet Explorer 6.0 (or higher)
- Ultra-mobile PC (UMPC) Internet Explorer

Media Center Interface

Screen Settings

- Minimum 1024 x 768 screen setting

Supported Media Center Extenders

- Xbox 360 (Media Center Extender)
- Xbox Media Center Extender
- HP x5400 Media Center Extender
- Linksys Media Center Extender (Model WMCE54G)
- Linksys DMA2x00 Extenders

Supported Hardware

mControl supports a variety of automation systems. The following section summarizes the list of automation systems supported.

Security Cameras

Support for Linksys Internet cameras, including:
- Linksys models: WVC54GCA

LINKSYS® A Division of Cisco Systems, Inc.	Embedded Automation is proud to support **Linksys** products as part of mControl. For more information on **Linksys**, visit http://www.linksys.com/ Image Courtesy of **Linksys**

Support for Axis Internet cameras, including:
- Axis models: 206, 206M, 206W, 207, 207W, 210, 210A, 211, 211A, 212PTZ, 213PTZ, 214PTZ, 221 and 225FD

AXIS COMMUNICATIONS	Embedded Automation is proud to support **Axis Communication** products as part of mControl. For more information on **Axis Communication**, visit http://www.axis.com/ Image Courtesy of **Axis Communication**

Support for Panasonic Internet cameras, including:
- Panasonic models: BB-HCM331, BL-C111, BL-C131, BB-HCM515, BB-HCM511 and BB-HCM531A

Panasonic ideas for life	Embedded Automation is proud to support **Panasonic** products as part of mControl. For more information on **Panasonic**, visit http://www.panasonic.com/business/security/network_cameras.asp Image Courtesy of **Panasonic**

Support for D-Link Internet cameras, including:
- DCS-900, DCS-900W (please confirm the proper firmware and set-up software: http://www.dlink.com/products/support.asp?pid=270)
- DCS-2100+
- DCS-3220 and DCS-6620
- DCS-5300W

D-Link	Embedded Automation is proud to support **D-Link Corporation** products as part of mControl. For more information on **D-Link Corporation**, visit http://www.dlink.com/ Image Courtesy of **D-Link Corporation**

Security Systems

Support for Elk Products, Inc. technologies, including:
- ELK-M1G (Gold) Cross Platform Control

ELK PRODUCTS, INC.	Embedded Automation is proud to support **Elk Products, Inc.** products as part of mControl. For more information on **Elk Product, Inc.**, visit http://www.elkproducts.com/index.html Image Courtesy of **Elk Products, Inc.**

Support for Digital Security Controls (DSC) technologies, including:
- DSC PowerSeries Security Systems

DSC Security Products	Embedded Automation is proud to support **Digital Security Controls (DSC)** products as part of mControl. For more information on **Digital Security Controls (DSC)**, visit https://www.dsc.com/Home.aspx Image Courtesy of **Digital Security Systems (DSC)**

Support for Honeywell Security technologies, including:
- ADEMCO VISTA Commercial Burglary Partitioned Security System With Scheduling

Honeywell	Embedded Automation is proud to support **Honeywell Security** products as part of mControl. For more information on **Honeywell Security**, visit http://www.security.honeywell.com/ Image Courtesy of **Honeywell Security.**

HVAC Systems

Support for HAI thermostats, including:
- Omnistat RC series thermostats

HAI	Embedded Automation is proud to support **Home Automation, Inc.** (HAI) products as part of mControl. For more information on **Home Automation, Inc.**, visit http://www.homeauto.com/Products/Omnistat/rc80.asp Image Courtesy of **Home Automation, Inc.** (HAI) © 2006

Support for RCS thermostats, including:
- TXB16 (X10) Thermostat
- TZ16 (Z-Wave) Thermostat

RCS	Embedded Automation is proud to support **Residential Control Systems Inc.** products as part of mControl. For more information on **Residential Control Systems Inc.**, visit http://www.resconsys.com/index.htm Image Courtesy of **Residential Control Systems Inc.** © 2006

Support for Proliphix thermostats, including:
- Thermostat NT10e and NT20e

PROLIPHIX	Embedded Automation is proud to support **Proliphix Inc.** products as part of mControl. For more information on **Proliphix Inc.**, visit http://www.proliphix.com/default.aspx Image Courtesy of **Proliphix Inc.** © 2007

Support for Aprilaire thermostats, including:
- 8870 Communicating Thermostat

Aprilaire Fresh Ideas for Indoor Air	Embedded Automation is proud to support **Aprilaire** products as part of mControl. For more information on **Aprilaire**, visit http://www.aprilaire.com Image Courtesy of **Aprilaire**

IR Support

Support for Global Caché Network Adapter technologies, including:
- GC-100-xx Network Adapters
- GC-IRL (IR Learner) – used to input IR commands
- GC-IRE (IR Extender) – used to input IR commands
- GC-RG1 (IR Receiver) – used to input IR commands

Global Caché	Embedded Automation is proud to support **Global Caché** products as part of mControl. For more information on **Global Caché**, visit http://www.globalcache.com/ Image Courtesy of **Global Caché** © 2005

Support for USB UIRT IR Adapter technologies, including:
- USB UIRT IR adapter – used to learn and blast IR commands

	Embedded Automation is proud to support **USB UIRT** products as part of mControl. For more information on **USB UIRT**, visit http://www.usbuirt.com/overview.htm

Irrigation Controllers

Support for SimpleHomeNet irrigation controllers, including:
- EZRain V1 Irrigation Controller

Simplehomenet	Embedded Automation is proud to support **SimpleHomeNet** products as part of mControl. For more information on **SimpleHomeNet**, visit http://simplehomenet.com/ Image Courtesy of **SimpleHomeNet** © 2006

Voice Recognition Support

Support for One Voice Technologies, including:
- Media Center Communicator™ 2.1 software

	Embedded Automation is proud to support **One Voice Technologies** products as part of mControl. For more information on **One Voice Technologies**, visit http://www.onev.com/mcc/index.htm Image Courtesy of **One Voice Technologies** © 2006

INSTEON Protocol

Embedded Automation is proud to support the **INSTEON** protocol as part of mControl.

For more information on **INSTEON**, visit http://www.insteon.com/

Image Courtesy of **SMARTHOME** © 2003

INSTEON Adapters

mControl supports multiple INSTEON adapters including:

- PowerLinc 2414U (USB) or 2414S (Serial)
- PowerLinc 2814U (USB) Timer
- Power Line Modem 2412U (USB) or 2412S (Serial)

  For the Power Line Modem 2412U (USB), you will need to load the associated driver, as provided by Smarthome. After loading the driver, the Power Line Modem 2412U will be available as a COM port.
- SimpleHomeNet EZBridge (IP to Serial)

When using serial INSTEON adapters, please confirm that other drivers are not also using a serial interface. For example, by default, mControl loads the serial driver of the X10 CM11A adapter. You may need to unload the X10 CM11A driver if both adapters are using the same serial port to ensure that there are no duplicate allocations of the serial port.

By default, mControl is configured to use the operate a PowerLinc 2414U or 2814U adapter interface. Use the mServer.exe.xml file to adjust to use other INSTEON adapters or adjust operational parameters.

Parameter	Meaning	Options
load	Whether INSTEON adapter support is loaded and used	Y = loaded N = not loaded *Default = Y*
ConnectUsing	Which communication port the adapter is configured to use. ➢ Select USB for PowerLinc 2414U or PowerLinc 2814U Timer ➢ Select SERIAL for PowerLinc 2414S, Power Line Modem 2412S or 2412U ➢ Select ETHERNET for SimpleHomeNet EZBridge	USB, SERIAL or ETHERNET *Default = USB*
COMPort	If Port is SERIAL, defines the COM port to be used.	COM1, COM2, … *Default = COM1*
IPAddr	If Port is ETHERNET, defines the IP Address to be used.	*Default = 192.168.0.65*
IPPort	If Port is ETHERNET, defines the IP port to be used.	*Default = 8002*
STARTUP_CHECK_LINK	During start-up, ensure that INSTEON devices within the mControl database are included within the PLC's link table.	true, false *Default = true*
STARTUP_CHECK_STAT	During start-up, get the current status value of the devices within the mControl database.	true, false *Default = true*
DisableX10Control	Since the 2414x/2814x can do both INSTEON and X10 control, use this parameter to ignore all X10 activity.	true, false *Default = false*
MapX10ToINST	Use this parameter to define X10 addresses to INSTEON addresses.	"<X10 address>= <INSTEON addresss>"
StartingHops	The default number of mesh hops to use in communication. This is largely a timing factor and allows for additional delays in talking with devices that are located several mesh hops away from the adapter. You may consider setting this to 2 or 3 if you have many devices that are located on different phases or far away from the INSTEON adapter.	0,1,2 or 3 *Default = 1*

There are different versions of the PowerLinc 2414x/2814x PowerLinc adapters. The following table describes the versions and their compatability with mControl:

Adapter Version	Adapter Firmware Version	Adapter SALad Version (download software area)	Comments
v1.7 or higher	*v2.13*	*TimerCoreApp v1.12*	*Preferred for mControl compatibility.*
v1.6	*v2.12*		*TimerCoreApp v1.06 or higher must be used to receive paddle feedback from switches*
v1.4 or below	*v2.09 or below*	*CoreApp*	*Will work, but some INSTEON commands may be lost due to non-queuing capability of the older firmware.*

INSTEON Devices

Support for most INSTEON devices, including:

mControl Module	*Description*	*Corresponding INSTEON Devices*
Appliance Module	ApplianceLinc Modules	2456S3 - ApplianceLinc V2 2856S3 - ICON Appliance On/Off 2475S - In-LineLinc Relay
Dimmable Module	LampLinc Modules	2475D - In-LineLinc Dimmer 2474D - Icon SL Dimmer Inline 2456D3 - LampLinc V2 2456D2 - LampLinc V2 2-Pin 2856D2 - ICON Lamp Dimmer
On/Off Switch	SwitchLinc On/Off Switches	2473S - OutletLinc 2476S - SwitchLinc V2 Relay 2876S - ICON In-Wall On/Off Switch 2466S - ToggleLinc V2 Relay
Dimmer Switch	SwitchLinc Dimmers	2476D - SwitchLinc V2 Dimmer 2876D - ICON In-Wall Dimmer 2476DH - SwitchLinc V2 Dimmer 1000W 2476ST - SwitchLinc Timer V2 2466D - ToggleLinc V2 Dimmer
KeyPad Modules	Multikey Modules	2486D - KeypadLinc V2 Dimmer 2886DB - ICON Keypad Dimmer 2486Dx - KeypadLinc V2 Dimmer 8-Button 2430 - ControLinc V2 2440 - RemoteLinc
Irrigation Module	Irrigation Modules	5010A - EZRain V1 Irrigation Controller
IO Modules	IO Modules	xxxxx – EZIOxx I/O Modules

Compatible with most INSTEON transceivers and remotes, including:

- 2442 - SignaLinc RF Signal Enhancer
- 2443 - AccessPoint

The following table summarizes INSTEON device behavior:

Previous State	Command	Result
OFF	ON	On at Preset On value
OFF	BRIGHT *	ON at x%, where x is defined by the mControl dim/bright granularity for the device
OFF	DIM *	OFF
OFF	OFF	OFF
ON	ON	ON at 100%
ON	BRIGHT *	ON – (y + x)%, where x is defined by the mControl dim/bright granularity for the device and y is the previous level. Maximum value is 100%
ON	DIM *	ON – (y – x)%, where x is defined by the mControl dim/bright granularity for the device and y is the previous level
ON	OFF	OFF

** For non-appliance devices only*

Hybrid INSTEON and X10 Environments

X10 to INSTEON Address Translations

To provide compatibility with other X10-based systems, mControl's MapX10ToINST functionality allows incoming X10 addresses to directly affect a corresponding INSTEON address. This functionality is done at the "driver" level of mControl – no automation or macros are required.

MapX10ToINST recognizable values are:

- *X10 address* – required X10 address to listen for and translate into an INSTEON address (does not have to be in the mControl database)
- *separator* – single character to separate the X10 and INSTEON address. Valid characters are ':', '-', '=', ' ' or '|'.
- *INSTEON address* – INSTEON address to translate the X10 address to (does not have to be in the mControl database)

In the following sample, two X10 addresses, B3 and B4, are mapped to INSTEON addresses, 00.EF.F0 and 00.EF.F1, respectively – they are separated by a '|' character.

```
<adapter base="2414U" load="Y" assembly="mServerAdapters.dll"
         driver="EmbeddedAutomation.mServer.Adapters.Insteon2414Manager">
   <aparam name="DISPLAY-AS" value="2414U"/>
   <aparam name="DESCRIPTION" value="INSTEON PowerLinc USB adapter"/>
   <aparam name="SUPPORTS" value="INSTEON|X10"/>
   <aparam name="APROTOCOL" value="INSTEON"/>
   <aparam name="PORTS" value="USB"/>
   <aparam name="MapX10ToINST" value="B3=00.EF.F0|B4=00.EF.F1"/>
</adapter>
```

Adapter Considerations for Hybrid INSTEON and X10 Environments

PowerLinc 2414x/2814x controllers are capable of X10 and INSTEON communications.

For optimum performance, especially within large or noisy hybrid X10 and INSTEON environments, consider using the PowerLinc 2414x/2814x solely for INSTEON messaging. Use the DisableX10Control parameter to disable X10 communication through the PowerLinc 2414x/2814x adapter and use a dedicated X10 adapter (e.g., CM11A or CM15A) for X10 messaging.

mControl allows creation of devices with the same physical address (e.g, Device1 with address X10=A1 and Device2 with address X10=A1). In this case, it is recommended that devices with the same address use the same adapter and reference the same device type. Selecting different adapters and device types, can result in erroneous behavior.

Advanced INSTEON Functionality

Link Databases

Like all INSTEON devices, the PowerLinc 2414x/2814x adapter has a "link database" (this is sometimes called the "PLC Database"). This link database has a list of all "linked" INSTEON devices.

For security reasons, the PowerLinc 2414x/2814x Adapter automatically obfuscates all INSTEON messages from devices not in the link database. Ostensibly, this is to ensure that your neighbor can not see the operation of your devices but you will be able to see all activity associated with your devices.

mControl can automatically link all entered devices entered within the PowerLinc 2414x/2814x adapter's link database.

To enable/disable automatic linking and status checking upon start-up of mControl, modify the STARTUP_CHECK_LINK (add an entry in the link database at startup) and STARTUP_CHECK_STAT (get the status of the device at startup) parameters within the "mServer.exe.xml" file, located in the "C:\Program Files\Embedded Automation\mControl\server" directory.

Please note, if you have a large database, upon start-up the automatic linking and status checking process may take a few minutes. Normally, this is unnoticeable because this happens before an mControl client is accessed.

mControl uses the following methods to update the PowerLinc's 2414x/2814x link database:

- Upon start-up, if STARTUP_CHECK_LINK is enabled, mControl tries to link all the INSTEON addresses within the mControl database.
- Upon entry of an INSTEON device using the Add/Edit Device page, mControl will attempt linking of the new device
- Upon deletion of an INSTEON device using the Edit Device page, mControl will attempt to remove the link of the deleted device
- Upon modification of an INSTEON address using the Edit Device page, mControl will attempt to remove the link of the unused device and link the address of the new device

Smarthome HouseLinc Software

Smarthome's HouseLinc software is complementary to mControl. HouseLinc may be used to programmatically set links for the PowerLinc 2414x/2814x adapter and/or remote devices. If this is done, it is recommended that the STARTUP_CHECK_LINK parameter is disabled.

Links and Device Status

If devices are not linked, mControl can recognize status changes only *if theses changes are initiated by mControl* – status changes from external sources, say a ControLinc or a SwitchLinc paddle press, *will not be recognized*.

mControl uses the following methods to update the status of devices stored in the mControl database and shown on the screen:

- Upon start-up, immediately after the linking process, mControl inquires for the status of each device and listens for the acknowledgement message
- Upon each command or macro, mControl listens for the acknowledgement message
- If the device is linked in the PLC Database, mControl is also able to listen for acknowledgements sent by the device as a response to the initiating device.

While it is possible to poll for status for INSTEON devices, mControl does not use polling to ensure that there is no additional traffic on the INSTEON bus. Generally speaking, Embedded Automation believes that polling causes unnecessary traffic which may conflict with device to device messaging – we believe that event-based messaging is best.

If mControl is not updating status of the device, the following problems may exist:

- The device did not link during start-up or the add/edit process. It is recommended to either re-start mControl, re-save the device using the Edit Device page or attempt manual linking.
- There is significant traffic or noise on the powerline and the PowerLinc 2414x/2814x adapter did not receive the status (or acknowledgement) message. Consider moving the adapter away from noisy electrical components (e.g., computer), relocate any X10 devices that are in the adapter's proximity (they can interfere with normal processing), reduce the traffic on your INSTEON network by reducing the number of external links.

Macro Triggering and Real-time Status Changes from SwitchLinc Paddle Presses

As shipped from the factory, the PowerLinc 2414x/2814x adapter can not “hear” paddle press messages originating from SwitchLinc. As a result, mControl can not show any status changes initiated by paddle presses on SwitchLinc devices.

To enable this, the PowerLinc 2414x/2814x and SwitchLinc must be linked to each other.

1. **Link the SwitchLinc to the PowerLinc**

   As part of mControl normal operation, mControl will automatically create a link within the PowerLinc 2414x/2814x link database upon entry of the SwitchLinc device.

2. **Link the PowerLinc to the SwitchLinc**

   SwitchLinc devices will only send paddle press changes to devices linked to it. As shipped from the factory, PowerLinc 2414x/2814x does not allow for “slave” links from other devices, like SwitchLincs, due to limitations in the “SALad core application”, a software application, which manages the interface between the INSTEON connection and the computer. To enable this functionality, a new SALad core application must be downloaded to the PowerLinc. Ensure the PowerLinc 2414x/2814x is using the TimerCoreApp (v1.06) or higher.

Once these steps have been completed, it is possible to receive real-time information (<2 seconds) from SwitchLinc devices. In addition, it is possible to use SwitchLinc On or Off paddle presses for macro triggers.

For more detailed information, please refer to mControl Application Note 06-0001-A.

Setting Preset On and Ramp Rates

mControl allows users to set the Preset On and Ramp Rates for the following devices:

- 2876DB ICON SwitchLinc
- 2476D SwitchLinc v2.2
- 2476D SwitchLinc v2.0
- 2486D KeypadLinc
- 2456D3 LampLinc

Please refer to the Edit Device section of this manual for additional information.

Z-Wave Protocol

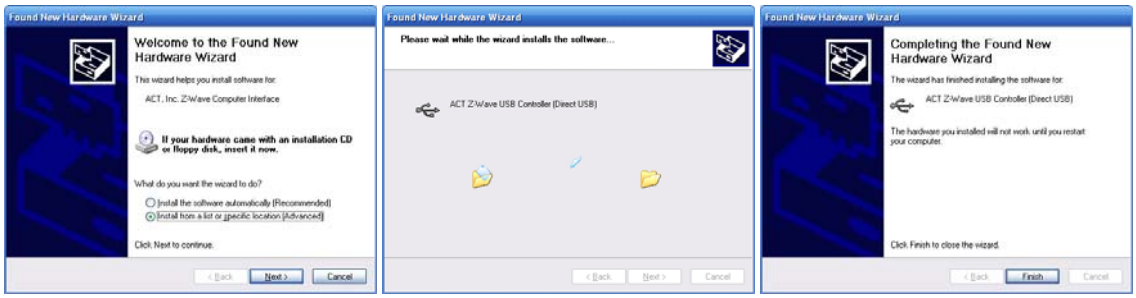
	Embedded Automation is proud to support the **Z-Wave** protocol as part of mControl. For more information on **Z-Wave**, visit http://www.z-wavealliance.org/content/modules/Start/ Image Courtesy of **Z-Wave Alliance** © 2006

Z-Wave Adapters

Support for Z-Wave PC adapters, including:
- Intermatic Computer Interface (Model No. HA22 – USB)
- HomePro Computer Interface (Model No. ZCU010 – USB) by ACT

For the HomePro Computer Interface For best results, we recommend using Z-Wave v4.10 or higher (Stationary Controller) firmware. Using older firmware may not provide feedback on device changes and hence, real-time client updates and macro triggers may not operate correctly.

If you have not previously used a Z-Wave adapter, you may be required to install the associated drivers – please refer to the documentation and software provided with your adapter. Upon plugging in the adapter, you will be required to provide a location for the driver files to be installed. Once the driver files are installed and your computer is rebooted, the adapters will be ready for use with mControl.


Found New Hardware Wizard
Welcome to the Found New Hardware Wizard
Found New Hardware Wizard
Please wait while the wizard installs the software...
ACT Z-Wave USB Controller (Direct USB)
Found New Hardware Wizard
Completing the Found New Hardware Wizard
ACT Z-Wave USB Controller (Direct USB)

Z-Wave and mControl terminology differences should be noted:

- *For Z-Wave, "controllers" are used to manage a Z-Wave network. There are two types of controllers, primary and secondary.*
  - *As the name implies, primary controllers are the primary controllers of the Z-Wave network and are used to set up the Z-Wave network and associated devices. Primary controllers are typically portable devices, which can manage local ("short range") enrollment and un-enrollment of Z-Wave devices.*
  - *A secondary controller contains information on the Z-Wave network and the associated devices. Secondary controllers are allowed to communicate with the existing network definition, but are not allowed to add or remove devices.*
- *The PC-attached devices which are capable of sending Z-Wave protocols are typically secondary controllers, though it is possible to configure these as primary controllers.*
- *For mControl, all PC attached devices used to interface to a home automation protocol are called adapters. Hence, as long as device is attached to the PC and is capable of sending out Z-Wave protocol messages, and regardless of configuration as a Z-Wave primary or secondary controller, in terms of mControl terminology, it is considered an adapter.*

Real-time Information Display

mControl can receive status changes from devices in real-time, allowing for up-to-date status information on devices and macro triggering. The speed of updates is dependent on the polling rate defined for the Z-Wave driver. This rate is set within the mServer.exe.xml file.

```
      <adapter base="ZWCTRL" load="Y" assembly="EA.ZWAVE.dll"
driver="EmbeddedAutomation.mServer.Adapters.ZWaveManager">
         <aparam name="DISPLAY-AS" value="Z-Wave Controller"/>
         <aparam name="Description" value="Z-Wave USB Controller"/>
         <aparam name="Supports" value="ZWAVE"/>
         <aparam name="AProtocol" value="ZWAVE"/>
         <aparam name="Ports" value="USB|COM1|COM2|COM3|COM4"/>
         <aparam name="IniPorts" value="USB"/>
         <aparam name="DebugLevel" value="5"/>
         <aparam name="PollingSeconds" value="10" note="zero means no polling.
Allowed range: {0-3600} seconds"/>
      </adapter>
```

To ensure robust network use and to comply with regional requirements, polling rates should be kept as high as possible – a simple rule of thumb is 1 second per device, so for 30 devices, use 30 seconds.

Z-Wave Devices

Support for most Z-Wave devices, including:

Device Type	***Devices Validated***
Binary Switches	▪ Intermatic HA01: In-Wall Receptacle ▪ Intermatic HA02: Plug-in Appliance Module ▪ Intermatic HA04: Outdoor Lighting Module
Multi-Level Switches	▪ Intermatic HA03: Plug-in Lamp Module ▪ Intermatic HA06: In-Wall Switch/Dimmer
Thermostats	▪ RCS TZ16 Thermostat

Works with the following Z-Wave devices, including:

Device Type	***Devices Validated***
Remotes	▪ Intermatic HA07: Master Remote Control ▪ Intermatic HA09: Handy Remote Control

Remotes can be used as Primary or Secondary controllers.

The following table summarizes multi-level Z-Wave device behavior:

Previous State	**Command**	**Result**
OFF	ON	On at Preset On value
OFF	BRIGHT *	ON at x%, where x is defined by the mControl dim/bright granularity for the device
OFF	DIM *	OFF
OFF	OFF	OFF
ON	ON	If below Preset On value, then goes to Preset On value, else ON at 100%
ON	BRIGHT *	ON – (y + x)%, where x is defined by the mControl dim/bright granularity for the device and y is the previous level. Maximum value is 100%
ON	DIM *	ON – (y – x)%, where x is defined by the mControl dim/bright granularity for the device and y is the previous level
ON	OFF	OFF

Z-Wave Adapter Utility

mControl setup installs a utility, called the Z-Wave Adapter Utility, which can be used to quickly and easily configure your Z-Wave adapter and associated network. Use the Z-Wave Adapter Utility to:

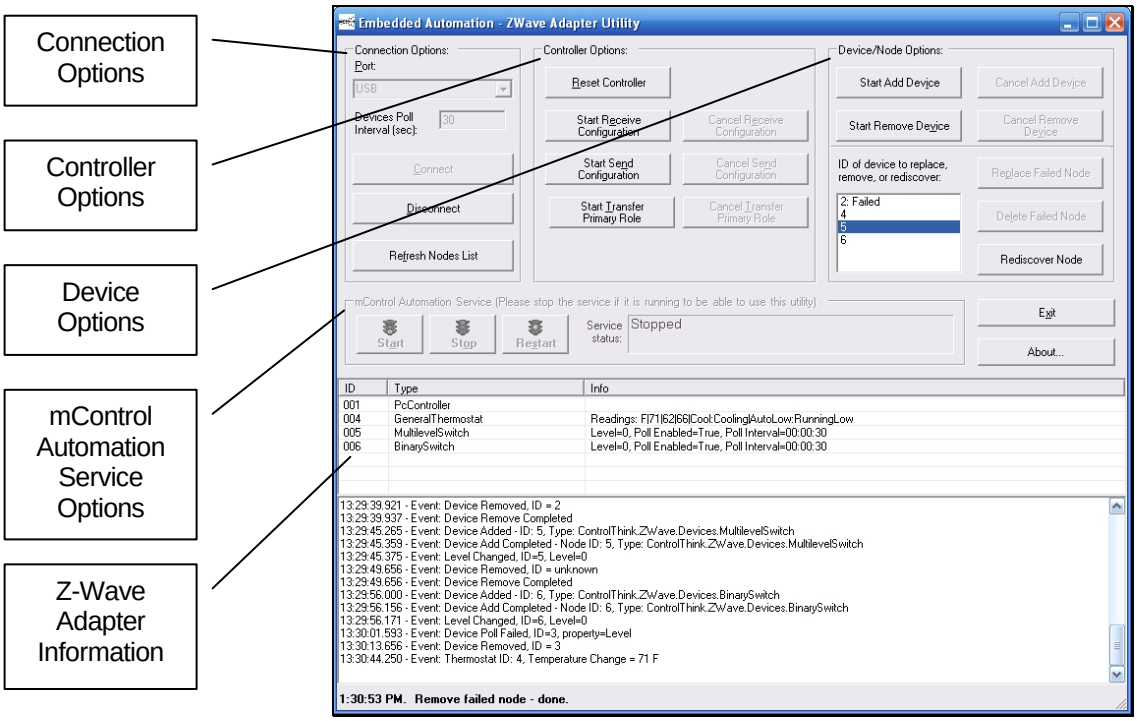
- Connect to the adapter
- Define the "controller" configuration for the adapter:
  - Reset the adapter to act as a Z-Wave primary controller
  - Reset the adapter to act as a Z-Wave secondary controller
  - Receive network information from another controller (if the adapter is configured as a secondary controller)
  - Send network information to another controller (if the adapter is configured as a primary controller)
- Quickly add/remove devices to the Z-Wave adapter/controller.

Only one software component can be connected to the Z-Wave adapter at one time.

- ***Upon starting the Z-Wave Adapter Utility and attempting to connect to the adapter, you will be prompted to stop the mControl Automation Service.***
- ***Upon leaving the Z-Wave Adapter Utility, a dialog box will prompt you to restart the mControl Automation Service.***

The Z-Wave Adapter Utility is automatically installed and is accessible from the "Tools" section of the mControl program area:

Once started, the following Windows-based dialog box is shown:


Connection Options
Controller Options
Device Options
mControl Automation Service Options
Z-Wave Adapter Information
Embedded Automation - ZWave Adapter Utility
Connection Options:
Port:
USB
Devices Poll Interval (sec):
30
Connect
Disconnect
Refresh Nodes List
Controller Options:
Reset Controller
Start Receive Configuration
Cancel Receive Configuration
Start Send Configuration
Cancel Send Configuration
Start Transfer Primary Role
Cancel Transfer Primary Role
Device/Node Options:
Start Add Device
Cancel Add Device
Start Remove Device
Cancel Remove Device
ID of device to replace, remove, or rediscover:
Replace Failed Node
Delete Failed Node
Rediscover Node
2: Failed
4
5
6
mControl Automation Service (Please stop the service if it is running to be able to use this utility)
Start
Stop
Restart
Service status:
Stopped
Exit
About...
ID
Type
Info
001 PcController
004 GeneralThermostat Readings: F|71|62|66|Cool:Cooling|AutoLow:RunningLow
005 MultilevelSwitch Level=0, Poll Enabled=True, Poll Interval=00:00:30
006 BinarySwitch Level=0, Poll Enabled=True, Poll Interval=00:00:30
13:29:39.921 - Event: Device Removed, ID = 2
13:29:39.937 - Event: Device Remove Completed
13:29:45.265 - Event: Device Added - ID: 5, Type: ControlThink.ZWave.Devices.MultilevelSwitch
13:29:45.359 - Event: Device Add Completed - Node ID: 5, Type: ControlThink.ZWave.Devices.MultilevelSwitch
13:29:45.375 - Event: Level Changed, ID=5, Level=0
13:29:49.656 - Event: Device Removed, ID = unknown
13:29:49.656 - Event: Device Remove Completed
13:29:56.000 - Event: Device Added - ID: 6, Type: ControlThink.ZWave.Devices.BinarySwitch
13:29:56.156 - Event: Device Add Completed - Node ID: 6, Type: ControlThink.ZWave.Devices.BinarySwitch
13:29:56.171 - Event: Level Changed, ID=6, Level=0
13:30:01.593 - Event: Device Poll Failed, ID=3, property=Level
13:30:13.656 - Event: Device Removed, ID = 3
13:30:44.250 - Event: Thermostat ID: 4, Temperature Change = 71 F
1:30:53 PM. Remove failed node - done.

Connection Options

- **Port** – select the COM or USB port on which the Z-Wave adapter is connected to. (Only the COM ports that are available on the machine are shown.)
- **Devices Poll Interval (sec)** – the polling rate for Z-Wave devices within the Z-Wave Adapter Utility.

  Note that this is a different setting than the mControl polling rate, which is set within the mServer.exe.xml file.
- **Connect** – connect to the selected Z-Wave adapter on the port specified.
- **Disconnect** – disconnect from the Z-Wave adapter
- **Refresh Devices List** – refresh the device list to the get latest information

Controller Options

- **Reset Controller** – use this button to configure the adapter as a Z-Wave primary controller.
    - There can only be one primary controller in your Z-Wave network.
    - To add and remove devices, the primary controller must be located within a close proximity to the devices being added or removed. Hence, it may not be prudent to set your adapter as a primary controller.

- **Start Receive Configuration** – use this button to receive network information from a primary controller. This button will set the Z-Wave adapter to be a secondary controller.
    - For example, if you are using a HA07 as a primary controller, you can transmit the network information to the Z-Wave adapter connected to your PC. Press the "Receive Configuration" button in the Z-Wave Adapter Utility, then press and hold the "Include" button on the HA07. "Copy" will be shown in the LCD display. Release the "Include" button. Press and release the Channel 1 ON/DIM button on the primary controller. "TA" which stands for "Transmit ALL data" will be shown next to the copy. After about 10 to 20 seconds, the Z-Wave Adapter Utility will complete receiving all the network data and display it in the Z-Wave Adapter Information window.

- **Cancel Receive Configuration** – use this button to abort the "Start Receive Configuration" request.

- **Start Send Configuration** – use this button to send network information to a secondary controller.
    - For example, if you have configured the Z-Wave adapter as the primary, you may want to transfer the network configuration to your HA07 remote.

- **Cancel Send Configuration** – use this button to abort the "Start Send Configuration" request.

- **Start Transfer Primary Role** – use this button to transfer the network information and primary role to another adapter. This button will set the Z-Wave adapter to be a secondary controller.

- **Cancel Transfer Primary Role** – use this button to abort the"Cancel Transfer Primary Role" request.

Device Options

If the adapter has been configured as a primary controller, the following Device Management Options are available:

- **Start Add Device** – use this button to initiate adding a Z-Wave device to the primary controller (adapter).

Z-Wave devices may not be able to be added if there were previously associated with another network. In this scenario, you may try to remove the device and then add the device.

- **Cancel Add Device** – use this button to abort the process of adding a Z-Wave device to the primary controller (adapter).
- **Start Remove Device** – use this button to initiate removing a Z-Wave devices from the primary controller (adapter).
- **Cancel Remove Device** – use this button to abort the process of removing a Z-Wave device from the primary controller (adapter.)
- **ID of Device To Replace, Remove or Rediscover** – this display window provides a list of devices in the network, which can be selected for replacement, deletion or rediscovery.
- **Replace Failed Node** – use this button to replace a failed node. This button deletes the node entry from the network and adds a replacement device with the address previously used by the failed device. This is useful because deleting and then adding a device may not result in the same node addressing within the network.
- **Delete Failed Node** – use this button to delete a failed node from the network. This button deletes the node entry from the network.
- **Rediscover Node** – use this button to rediscover Z-Wave information about the node.

Please note, older adapters/firmware may have problems with unenrolling and then re-enrolling devices. Please verify your network before adding devices to mControl.

mControl Automation Service Options

- **Start** – Start the mControl Automation Service. This button will typically be selected to restart the service after completing configuration using the Z-Wave Adapter Utility and disconnecting from the adapter.
- **Stop** – Stop the mControl Automation Service. This button will typically be selected before connecting to the adapter.
- **Restart** – Restart the mControl Automation Service.
- **Service Status** – displays the status of the mControl Automation Service
- **Exit** – Exit the Z-Wave Adapter Utility
- **About** … – Information about the Z-Wave Adapter Utility

Z-Wave Adapter Information

- **Network Configuration** – this window provides the network configuration stored within the Z-Wave Adapter.
- **Log** – this window provides a real-time display of network activity, as viewed by the Z-Wave adapter.

Adding Z-Wave Devices to mControl

Use the following methods to add Z-Wave devices to mControl (shown in order of typical use):

- **If the Z-Wave adapter is defined as a secondary controller**

  If not already set, use the Z-Wave Adapter Utility to define the Z-Wave adapter as a secondary controller.

  With the adapter configured as a secondary controller, you will not be able enroll or un-enroll devices from within mControl. You must use the Z-Wave Adapter Utility to receive the network information, including devices defined on the network, from a primary controller. Follow the instructions provided on your primary controller to replicate (copy) the primary controller settings to a secondary controller to initiate this process.

  Once this has been completed, use the mControl Edit Device page to associate device names to the corresponding Z-Wave network device enrolled IDs.

- **If the Z-Wave adapter is defined as a primary controller**

  If not already set, use the Z-Wave Adapter Utility to define the Z-Wave adapter as a primary controller.

  Once the Z-Wave adapter has been reset as a primary controller, devices IDs can be directly enrolled or un-enrolled to the adapter (primary controller). This can be done from either the Z-Wave Adapter Utility or directly within mControl (Edit Device page).

  Once this has been completed, use the mControl Edit Device page to associate device names to the corresponding Z-Wave network enrolled device IDs.

Removing Z-Wave Devices from mControl

Use the following methods to remove Z-Wave devices from mControl (shown in order of typical use):

- **If the Z-Wave adapter is defined as a secondary controller**

  Remove the devices from your primary controller. You must use the Z-Wave Adapter Utility to receive the updated network information from the primary controller. Follow the instructions provided on your primary controller to replicate (copy) the primary controller settings to a secondary controller to initiate this process.

  Once this has been completed, you must use the mControl Edit Device page to delete the corresponding Z-Wave network device IDs. This removes the device from the mControl database.

- **If the Z-Wave adapter is defined as a primary controller**

  This can be done from either the Z-Wave Adapter Utility or directly within mControl (Edit Device page).
  - From the Z-Wave Adapter Utility – select the “Start Remove Device” button to remove the device from the network.
  - From within mControl (Edit Device page) – select the “Unenroll” button to remove the device from the network.

  Once this has been completed, you must use the mControl Edit Device page to delete the corresponding Z-Wave network device IDs. This removes the device from the mControl database.

Rako Protocol

	Embedded Automation is proud to support the **Rako** protocol as part of mControl. For more information on **Rako**, visit http://www.rakocontrols.com/ Image Courtesy of **Rako Controls** © 2007

Rako Adapters

mControl supports the following Rako adapters:

- RAV232+ Bi-Directional RS232-RF Interface

By default, the RAV232+ adapter driver is disabled. Use the mServer.exe.xml file to adjust parameters associated with RAV232+ adapter operation:

Parameter	Meaning	Options
load	Whether the adapter is loaded and used	Y = loaded N = not loaded *Default = N*
COMPort, BAUD	Which communication port and baud rate the adapter is configured to use	*Default = COM1* *Default = 9600*
House Code	Which Rako House Code to use	*Default = 1*

When using serial Rako adapters, please confirm that other drivers are not also using a serial interface. For example, by default, mControl loads the serial driver of the X10 CM11A adapter. You may need to unload the X10 CM11A driver if both adapters are using the same serial port to ensure that there are no duplicate allocations of the serial port.

Rako Devices

Support for most Rako devices, including:

Devices
Multi-level switches – for example, RDL500 (500VA Inductive Dimmer)
Binary switches

X10 Protocol

X10 Adapters

Support for most X10 adapters, including:

Adapter	Protocol	Command Send (Power line)	Command Receive (Power line)	Command Send (RF)	Command Receive (RF)
PowerLinc 1132Cx	X10 (Standard)	Supported	Supported	Not supported	Not Supported
PowerLinc 2414x	X10 (Standard)	Supported	Supported	Not supported	Not Supported
CM11A, CM11U, CM12U	X10 (Standard, Extended)	Supported	Supported	Not supported	Not Supported
CM15A	X10 (Standard)	Supported	Supported	Supported	Supported
CM19A	X10 (Standard)	Not Supported	Not Supported	Supported	Supported
CM17A	X10 (Standard)	Not Supported	Not Supported	Supported	Not supported
W800RF32A	X10	Not Supported	Not Supported	Not Supported	Supported

For adapters which do not have RF receive capability, to receive X10 RF messages you must use an X10 Transceiver (e.g., TM751) to translate the X10 RF signal to X10 PLC signal – once on the powerline, the adapter can receive the incoming command.

PowerLinc 1132Cx Adapter
By default, the PowerLinc 1132Cx adapter driver is disabled. Use the mServer.exe.xml file to adjust parameters associated with PowerLinc 1132Cx adapter operation:

Parameter	Meaning	Options
load	Whether the adapter is loaded and used	Y = loaded N = not loaded *Default = N*
Port	Which communication port the adapter is configured to use	*Default = USB*

PowerLinc 2414x/2814x Adapter
By default, the PowerLinc 2414x/2814x adapter driver is enabled for use on USB. Use the mServer.exe.xml file to adjust parameters associated with PowerLinc 2414x/2814x adapter operation:

Parameter	Meaning	Options
load	Whether the adapter is loaded and used	Y = loaded N = not loaded *Default = Y*
Port	Which communication port the adapter is configured to use	USB, COMx *Default = USB*

CM11A X10 Adapter
By default, the CM11A adapter driver is enabled for use on COM1 with a dedicated connection to the port to allow receipt of incoming X10 commands. Use the mServer.exe.xml file to adjust parameters associated with CM11A adapter operation:

Parameter	Meaning	Options
load	Whether the adapter is loaded and used	Y = loaded N = not loaded *Default = Y*
Port	Which communication port the adapter is configured to use	COMx = COM port # *Default = COM1*
KeepPortOpen	Whether this is a dedicated connection to the port, or only open when a send is required. If "false" then incoming X10 signals will not be received	true = dedicated false = non-dedicated *Default = true*

CM17A X10 Adapter
By default, the CM17A adapter driver is not enabled. Use the mServer.exe.xml file to adjust parameters associated with CM17A adapter operation:

Parameter	Meaning	Options
load	Whether the adapter is loaded and used	Y = loaded N = not loaded *Default = N*
Port	Which communication port the adapter is configured to use	COMx = COM port # *Default = COM1*
KeepPortOpen	Whether this is a dedicated connection to the port, or only open when a send is required.	true = dedicated false = non-dedicated *Default = false*

CM15A/CM19A X10 Adapter

The CM15A and CM19A adapters use the same mControl driver. By default, the mControl driver for these adapters is enabled, with powerline as the sending method.

To use the CM15A and CM19A adapter, you must install the 3rd party software. The mControl driver for these adapters uses the "ActiveHome Script" software provided by X10. This 3rd party software can be found in the C:\Program Files\Embedded Automation\mControl\third party\X10 directory.

Additionally, to use the CM19A adapter, you will need to:

- *Install the CM19A wireless drivers, also available in the C:\Program Files\Embedded Automation\mControl\third party\X10 directory, called x10drivers.exe*
- *Set the default send method to be RF (since the CM19A is incapable of sending via powerline)*

Use the mServer.exe.xml file to adjust parameters associated with CM15A/M19A adapter operation:

Parameter	Meaning	Options
load	Whether the adapter is loaded and used	Y = loaded N = not loaded *Default = Y*
SendThrough	On which media are mControl X10 send commands transmitted ➢ *CM15A can send either via RF or PLC* ➢ *CM19A can only send via RF*	PLC = via powerline RF = via wireless/RF *Default = PLC*

W800RF32A X10 Adapter

By default, the W800RF32A adapter driver is not enabled. Use the mServer.exe.xml file to adjust parameters associated with W800RF32A adapter operation:

Parameter	Meaning	Options
load	Whether the adapter is loaded and used	Y = loaded N = not loaded *Default = N*
Port	Which communication port the adapter is configured to use	COMx = COM port # *Default = COM1*
KeepPortOpen	Whether this is a dedicated connection to the port, or only open when a send is required.	true = dedicated false = non-dedicated *Default = false*

Alternate Adapter Resolution
If the adapter associated with the device is not found, mControl will automatically search for other available and capable adapters to send X10 commands. The search order for alternate adapter is done alphabetically.

Consider the following example:

- The following adapters are enabled within the mServer.exe.xml file and connected to the computer: 2414X (INSTEON), CM11A and CM15A.
- There is a device at X10 address A2 which has been configured to use the CM11A
- The CM11A becomes unavailable – for example, it is disconnected
- A command to the device at X10 address A2 will be routed via the 2414X (since it is alphabetically before CM15A)

X10 Devices

Support for most X10 devices, including:

mControl Module	Description	Example X10 Devices
X10_BINSW (**Standard**)	X10 On/Off Switch/Module	AM12U – Plug-in Appliance Module AM466 – Appliance module
X10_DIMMER (**Standard**)	X10 Dimmable Switch/Module	LM12U – Plug-in Lamp Module LM465 – Lamp module
X10_EXTDIMMER (**Extended**)	X10 2-Way Dimmable Switch/Module	LM14A (LW12) – 2-Way Lamp Modules Leviton Extended X10 Modules
X10_SENSOR	X10 Motion Sensor	MS14A - EagleEye Motion Sensor
X10_RELAY	X10 I/O Module	UM506 – Universal Module
X10_THERMOS	X10 Thermostat	RCS TXB16 X10 Thermostat

Compatible with most X10 transceivers, including:
- W800RF32A – Wireless RF Transceiver
- RR501 - Transceiver Module
- TM13U - RF Transceiver
- TM751 - RF Transceiver

Compatible with most X10 remotes, including:
- HR12A - PalmPad Remote Control
- KR19A - Remote Control Module (Keychain)
- KR22A - Remote Control Module - RSS18 - Remote Wall Switch
- SS13A - Remote Wall Switch
- SS15A - Remote Wall Switch
- UR73A - Universal Remote with X10

The following table summarizes X10 device behavior:

Previous State	Command	Result
OFF	ON	ON – 100%
OFF	BRIGHT *	**Standard** X10: ON – 100% **Extended** X10: ON – x%, where x is defined by mControl dim/bright granularity for the device.
OFF	DIM *	**Standard** X10: ON – 100% **Extended** X10: ON – 0%, where x is defined by mControl dim/bright granularity for the device.
OFF	OFF	OFF
ON	ON	**Standard** X10: ON – at previous level (*status will show 100%*) **Extended** X10: 100%
ON	BRIGHT *	ON – (y + x)%, where x is defined by the mControl dim/bright granularity for the device and y is the previous level
ON	DIM *	ON – (y – x)%, where x is defined by the mControl dim/bright granularity for the device and y is the previous level
ON	OFF	OFF

** For non-appliance devices only*

Leviton X10 Devices

LEVITON Building A Connected World	Embedded Automation is proud to support **Leviton Mfg. Company Inc.** X10 products as part of mControl. For more information on **Leviton Mfg. Company Inc.**, visit http://www.leviton.com/ Image Courtesy of **Leviton Mfg. Company Inc.**

mControl provides extended X10 support for Leviton dimmable devices including:
- Dimming Switches (e.g., HMC10)
- Dimming Modules (e.g., HCP03)

Limitations and Recommendations

1. All adapters must be attached to the PC where the mControl Automation Service is installed.
2. For hybrid X10 and INSTEON environments, consider using an X10 adapter for X10 incoming/outgoing messages and the INSTEON adapter for INSTEON ***only*** incoming/outgoing messages.

mControl Installation

Step 1 - Install mControl software

If you are installing mControl for the first time, skip directly to the “Download the Latest Version of mControl” step.

mControl Trial Version

mControl v2 (Home Edition) is provided for a 30-day trial from the Embedded Automation web site. A copy-protection mechanism manages this limitation. mControl will periodically show the number of days remaining in the trial when the “Zone View” screen is accessed. The trial version of mControl offers full software functionality for the duration of the trial.

Upon expiration, mControl will continue to operate as usual, however, automation commands will only be sent to the first defined device.

Any re-installation or tampering with system date and/or the mControl license will cause automatic expiration of the copy protection. Please contact Embedded Automation to extend your 30-day trial by emailing support@embeddedautomation.com.

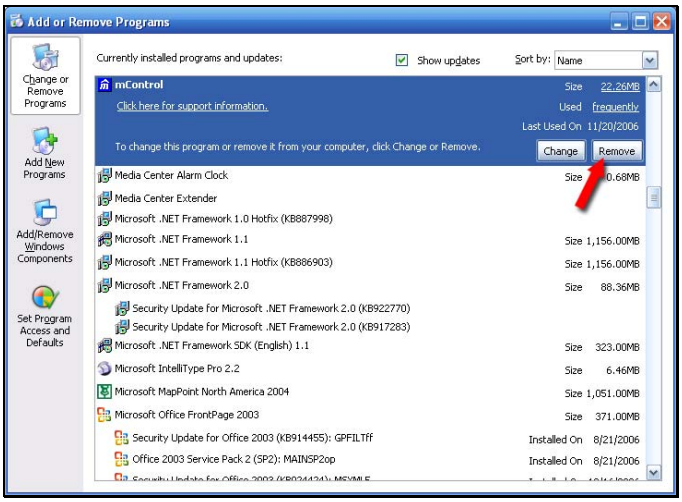
Upgrading mControl

Whether you are using a trial version of mControl or a purchased license of mControl, you can upgrade to a more recent version of mControl.

If you are upgrading mControl to a more recent version, please uninstall the previous version. The mControl uninstall process will not remove any of your existing information – all zone, device, adapter and license information will be kept for subsequent versions. In addition, mControl makes a backup of your key files in the \backup directory.

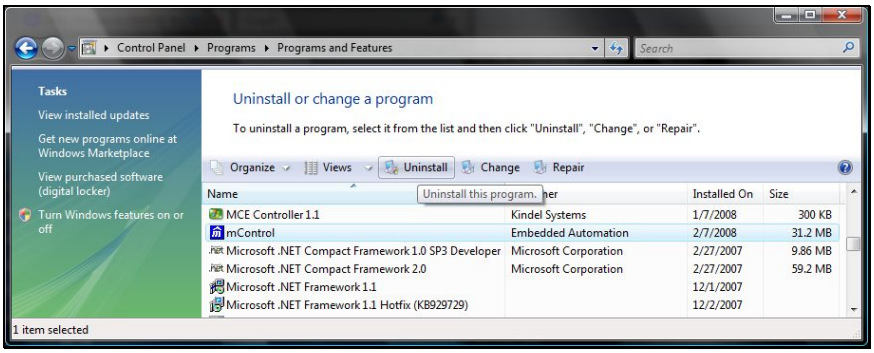
Uninstalling mControl from Windows XP Systems

Use the Windows XP's "Add or Remove Programs" utility to uninstall the previous version. To use this utility, press the Start button, then select Control Panel and finally select "Add or Remove Programs". Cursor to mControl and press the "Remove" button to uninstall the previous version.


Add or Remove Programs
Currently installed programs and updates:
Show updates
Sort by: Name
Change or Remove Programs
Add New Programs
Add/Remove Windows Components
Set Program Access and Defaults
mControl
Size 22.26MB
Click here for support information.
Used frequently
Last Used On 11/20/2006
To change this program or remove it from your computer, click Change or Remove.
Change
Remove
Media Center Alarm Clock
Media Center Extender
Microsoft .NET Framework 1.0 Hotfix (KB887998)
Microsoft .NET Framework 1.1
Size 1,156.00MB
Microsoft .NET Framework 1.1 Hotfix (KB886903)
Size 1,156.00MB
Microsoft .NET Framework 2.0
Size 88.36MB
Security Update for Microsoft .NET Framework 2.0 (KB922770)
Security Update for Microsoft .NET Framework 2.0 (KB917283)
Microsoft .NET Framework SDK (English) 1.1
Size 323.00MB
Microsoft IntelliType Pro 2.2
Size 6.46MB
Microsoft MapPoint North America 2004
Size 1,051.00MB
Microsoft Office FrontPage 2003
Size 371.00MB
Security Update for Office 2003 (KB914455): GPFILTff
Installed On 8/21/2006
Office 2003 Service Pack 2 (SP2): MAINSP2op
Installed On 8/21/2006

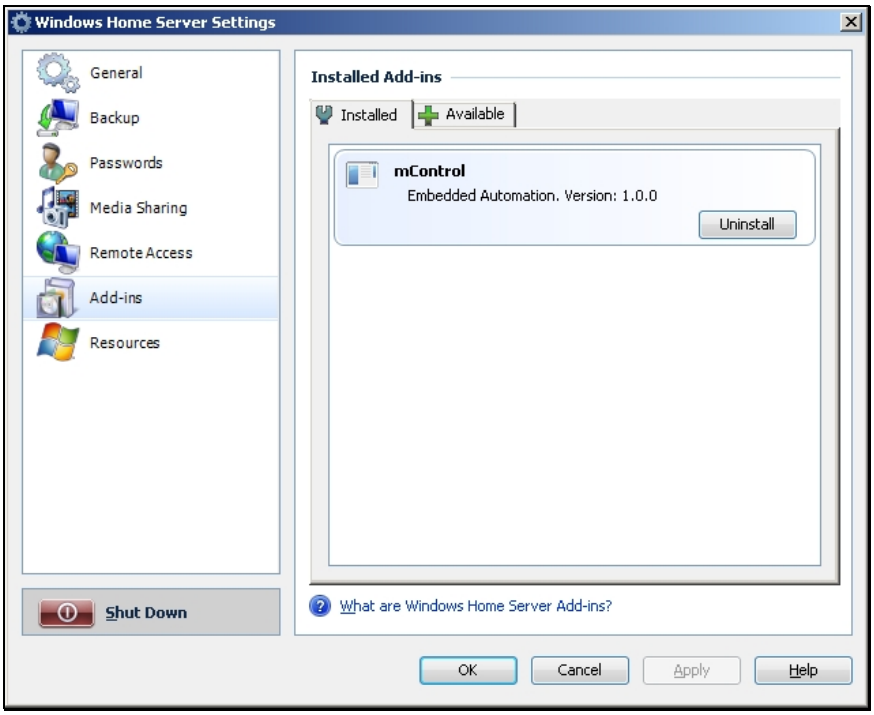
Uninstalling mControl from Windows Vista Systems

Use the Windows Vista's "Programs and Features" utility to uninstall the previous version. To use this utility, press the Start button, then select Control Panel and finally select "Programs and Features". Cursor to mControl and press the "Uninstall" button to uninstall the previous version.



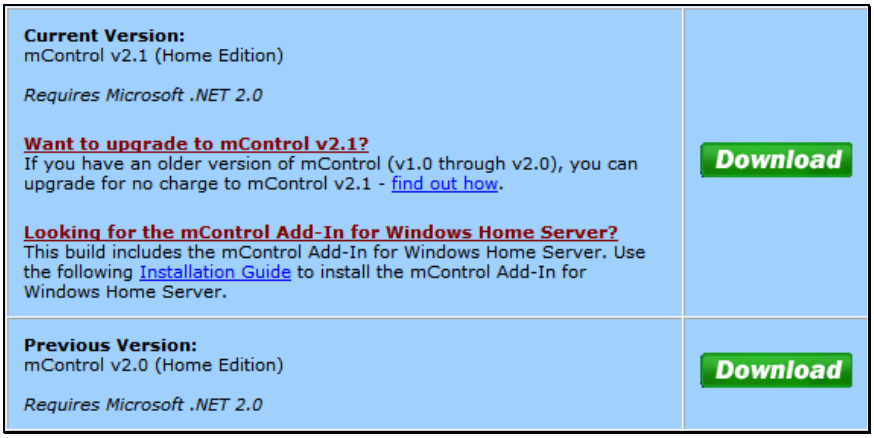
Uninstalling mControl from Windows Home Server Systems

Use the Windows Home Server Settings utility to uninstall the previous version. To use this utility, start the Windows Home Server Console, then select Settings and finally select the "Add-ins" option and the "Installed" tab. Cursor to mControl and press the "Uninstall" button to uninstall the previous version.

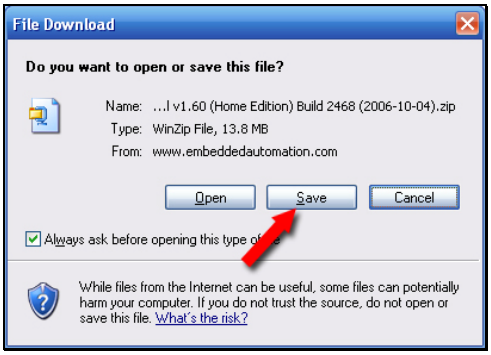


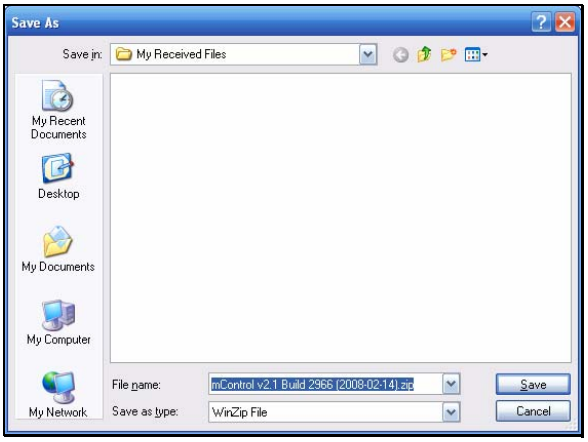
Downloading the Latest Version of mControl

As a customer (or as a trial user), the first thing that you will need to do is download the most recent mControl version from the Embedded Automation website (http://www.EmbeddedAutomation.com).


Current Version:
mControl v2.1 (Home Edition)
Requires Microsoft .NET 2.0
Want to upgrade to mControl v2.1?
If you have an older version of mControl (v1.0 through v2.0), you can upgrade for no charge to mControl v2.1 - find out how.
Looking for the mControl Add-In for Windows Home Server?
This build includes the mControl Add-In for Windows Home Server. Use the following Installation Guide to install the mControl Add-In for Windows Home Server.
Download
Previous Version:
mControl v2.0 (Home Edition)
Requires Microsoft .NET 2.0
Download

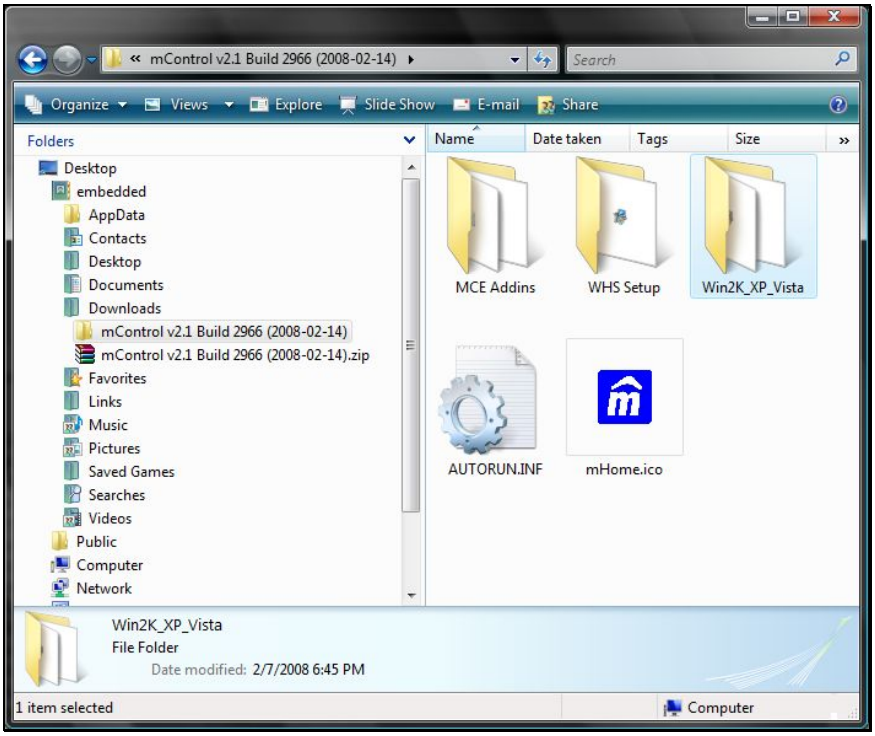
Once the download has initiated, "Save" mControl to your hard drive – for example, in the "My Received Files" area.


File Download
Do you want to open or save this file?
Name: ...l v1.60 (Home Edition) Build 2468 (2006-10-04).zip
Type: WinZip File, 13.8 MB
From: www.embeddedautomation.com
Open
Save
Cancel
Always ask before opening this type of file
While files from the Internet can be useful, some files can potentially harm your computer. If you do not trust the source, do not open or save this file. What's the risk?



The downloaded file is a ZIP file, so you must use WinZip or equivalent to extract the contents.

You can not install mControl without first extracting the necessary files.



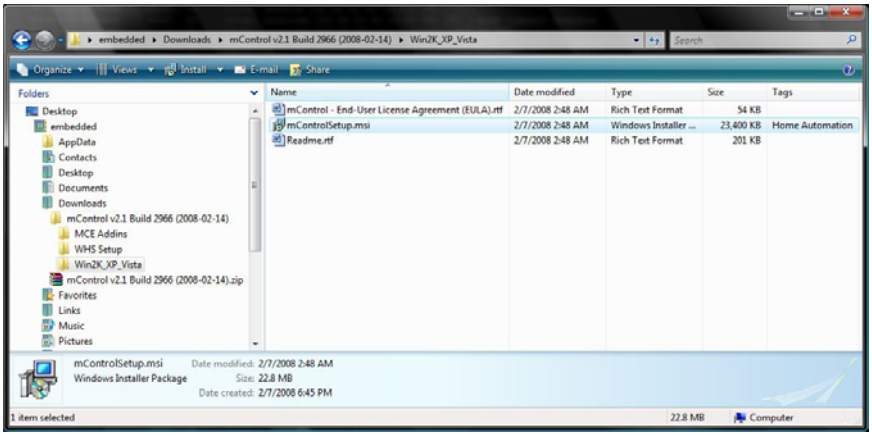
Installing mControl

Installing mControl on Windows XP and Windows Vista Systems

You must be logged on as an administrator to install mControl.

Under Windows Vista, with User Account Control (UAC) enabled, you may be prompted to enable mControl installation to start.

To install on Windows XP or Windows Vista systems, select the Win2K_XP_Vista directory. Then simply use the mControlSetup.msi file (via a double-click) to install mControl.



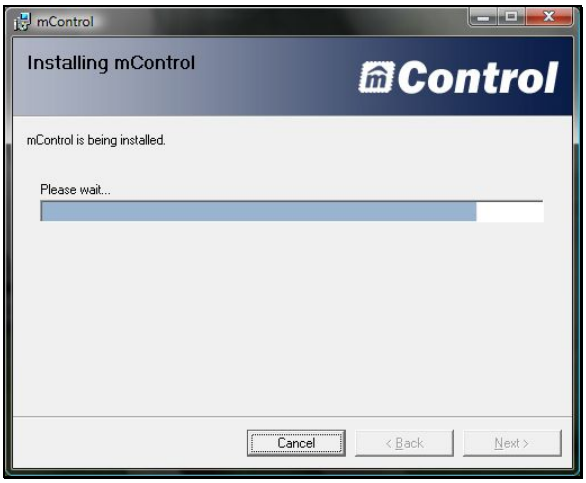
The installation process can take several minutes and will automatically install all of the software required for mControl. Any changes, for example, upgrading to the latest version of the mControl database, are also automatically done as part of the installation process.

mControl
mControl
v2 (Home Edition)
Digital Home Software
(c) Copyright 2005-2007 - Embedded Automation, Inc.
Welcome: This wizard will guide you through the steps required to install mControl on your computer.
WARNING: This computer program is protected by copyright law and international treaties. Unauthorized duplication or distribution of this program, or any portion of it, may result in severe civil or criminal penalties, and will be prosecuted to the maximum extent possible under the law.
Cancel
< Back
Next >

You must agree with the End-User License Agreement (EULA) to continue installation. Please read and accept to continue.

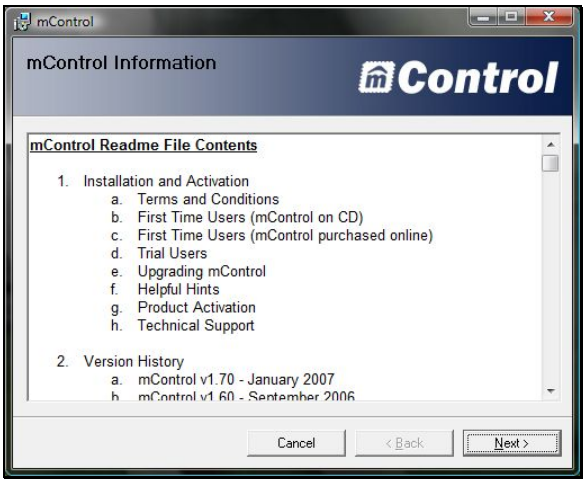
mControl
License Agreement
mControl
Please take a moment to read the license agreement now. If you accept the terms below, click "I Agree", then "Next". Otherwise click "Cancel".
mControl (Home Edition) Software End User License Agreement
EMBEDDED AUTOMATION SOFTWARE END USER LICENSE AGREEMENT FOR PERSONAL USE ONLY
IMPORTANT: THIS SOFTWARE END USER LICENSE AGREEMENT ("EULA") IS A LEGAL AGREEMENT BETWEEN YOU (EITHER AN INDIVIDUAL OR, IF PURCHASED OR OTHERWISE ACQUIRED BY OR FOR AN ENTITY, AN ENTITY) AND EMBEDDED AUTOMATION. READ IT
I Do Not Agree
I Agree
Cancel
< Back
Next >

After confirmation of these settings, mControl will be installed. This may take several minutes.

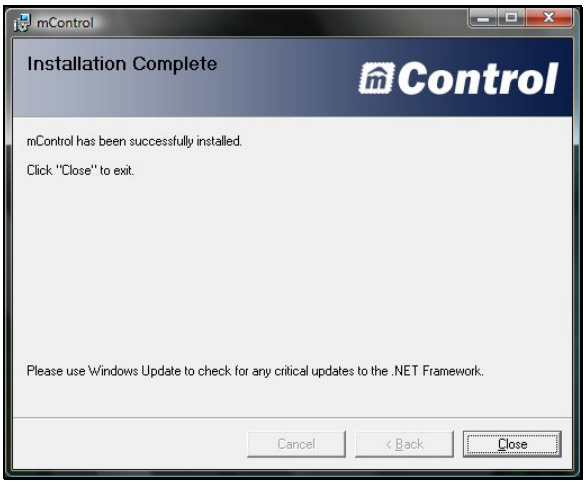


Once completed, the Readme.rtf file will be shown. This file provides information on your mControl software, including:

- Terms and Conditions of Use
- How to install your user license (from CD or online purchase)
- How to contact Embedded Automation technical support
- Information on mControl versions

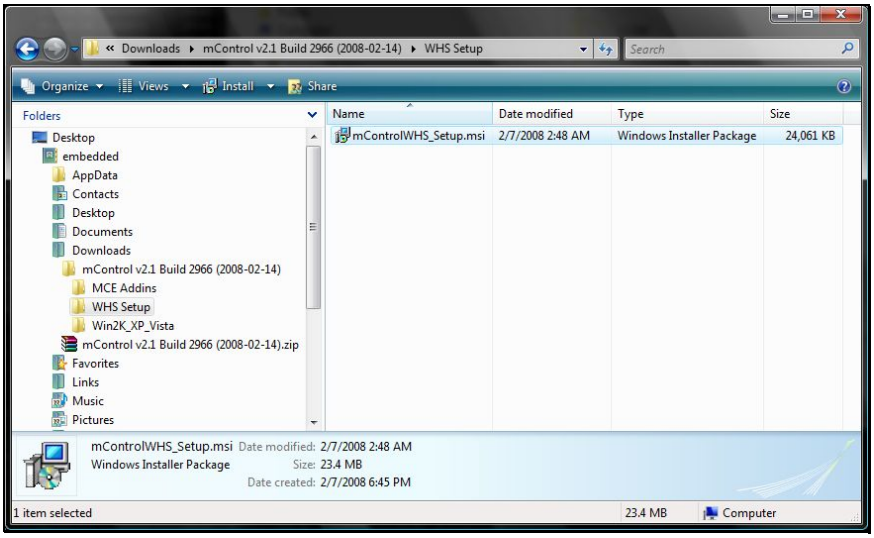


After reading the readme.rtf file, the installation will be complete.



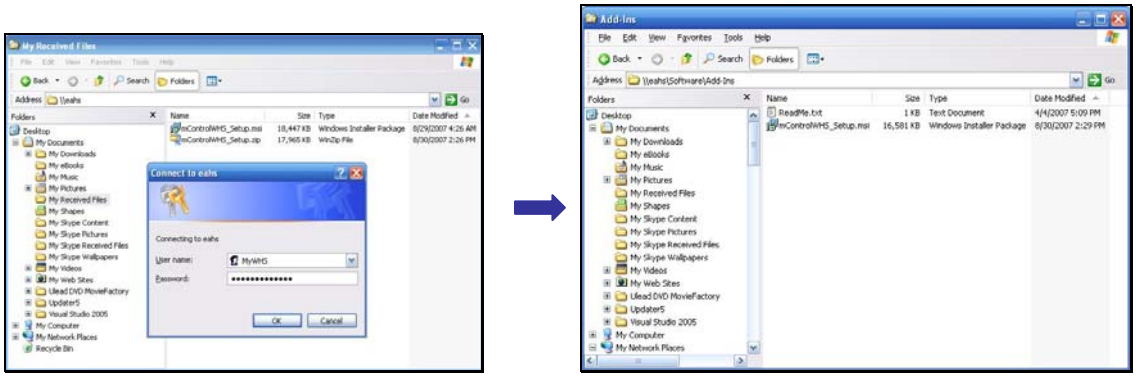
Installing mControl on Windows Home Server Systems

To install on Windows Home Server systems, select the WHS Setup directory.

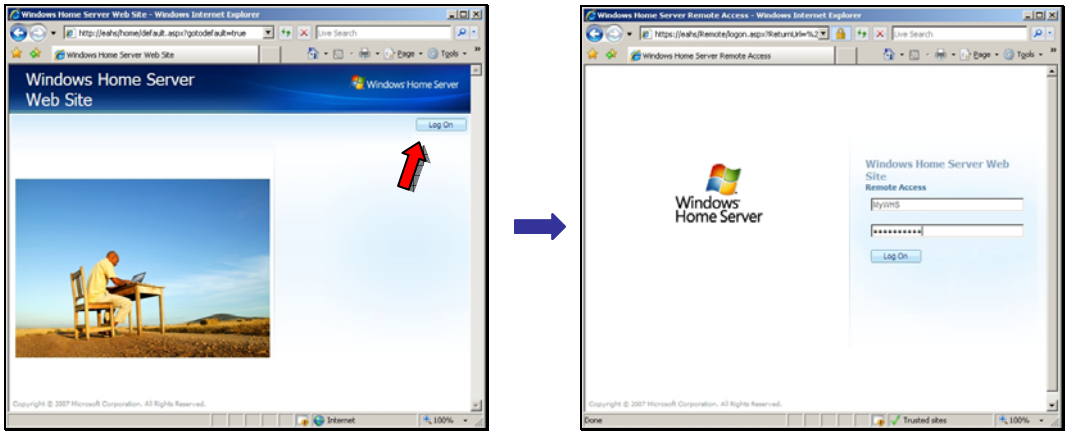


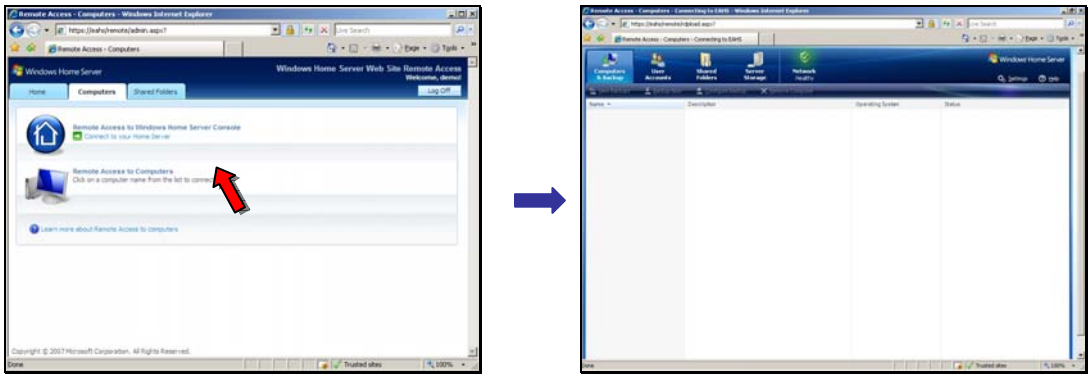
Copy the mControl Installer to Windows Home Server

Logon to your Windows Home Server system and copy the mControl Add-in for Windows Home Server installer, called “mControlWHS_Setup.msi” to the “\Software\Add-ins” shared directory.



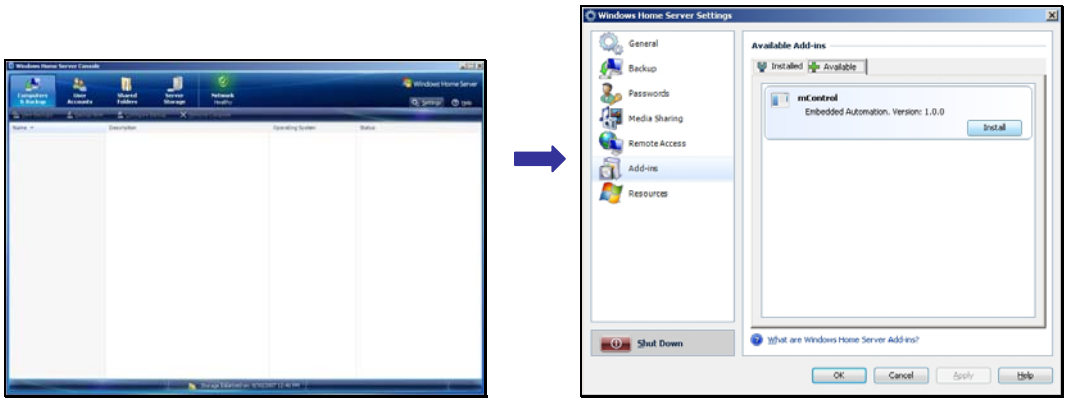
Using Internet Explorer, logon to your Windows Home Server console and access the Windows Home Server console using the Remote Access to Windows Home Server Console under the Computers tab.



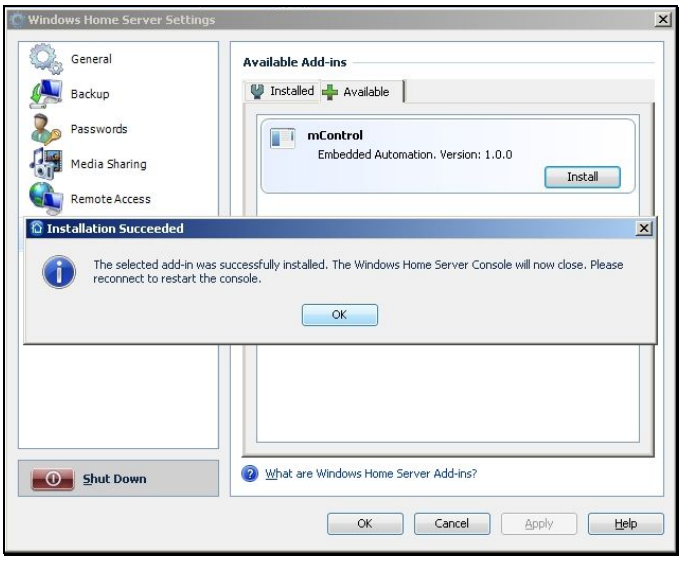


Use the Windows Home Server Add-in Manager to Install mControl

Logon to your Windows Home Server system and use the Settings button to access the Add-in management functions of Windows Home Server.



Select mControl and press the “Install” button to install the mControl Add-in for Windows Home Server.



Restricting User Access to mControl

To prevent improper user access, select and set the most suitable authentication method. By default, mControl is available to all external users.

- Logon locally to your WHS machine.
- Go to "Administrative Tools" and access "Internet Information Services" (IIS)
- Using the navigation tree, locate mControl under the "Default Web Site".
- Right-click and select "Properties" and then select the "Directory Security" tab. Select the "Edit ..." button in the "Anonymous Access and Authentication" section
- Turn off "Anonymous Access" and select the "Authentication" method best suited for you.

To understand authentication choices:
http://en.wikipedia.org/wiki/Internet_Information_Services#Authentication_mechanisms

mControl Installation Information

Default Install Locations

mControl is installed in the following default directory locations:

- For Windows XP and Windows Vista: C:\Program Files\Embedded Automation\mControl
- For Windows Home Server: C:\Inetput\wwwroot\mControl

Installed mControl Components

The following software components are installed by the mControl Installer:

Component	Windows XP or Windows Vista	Windows Home Server
mControl Automation Service	The mControl Automation Service is the automation engine for mControl. It includes a web server for all the various clients. This component is installed as a Windows service. File: ***mServer.exe*** Location: ***<Install Directory>\server***	The mControl Automation Service is the automation engine for mControl. It includes a web server for all the various clients. This component is installed as a Windows service. File: ***mServer.exe*** Location: ***<Install Directory>\server***
mControl Editor	The mControl Editor Utility allows for spreadsheet-like editing of mControl database values. File: ***mControlEditor.exe*** Location: ***<Install Directory>\bin***	The mControl Editor Utility allows for spreadsheet-like editing of mControl database values. Installed as component of the Windows Home Server Console
mControl Service Manager	The mControl Service Manager provides a user interface to manage the operation of the mControl Automation Service. File: ***mServerUtil.exe*** Location: ***<Install Directory>\bin***	The mControl Service Manager provides a user interface to manage the operation of the mControl Automation Service. Installed as component of the Windows Homer Server Console
mControl Z-Wave Adapter Utility	The mControl Z-Wave Adapter Utility is a configuration utility for managing Z-Wave network adapters. File: ***ZWaveUtil.exe*** Location: ***<Install Directory>\bin***	Not installed – to use, install mControl on a different machine and use this utility.
One Voice to mControl Bridge	The One Voice to mControl Bridge provides a link between One Voice's Media Center Communicator voice recognition system and mControl, allowing execution of mControl commands and macros by voice. File: ***mControlOV.exe*** Location: ***<Install Directory>\bin***	Not installed.

Installed 3rd Party Software Components

For convenience, the following third party software components are copied to the mControl directory system, but require installation separately:

Component	Description
X10 ActiveHome Scripting System	Driver software, provided by X10, to allow software, like mControl, to programmatically communicate with a X10 CM15A or CM19A adapter. File: ***ahscript_setup.exe*** Location: ***C:\Program Files\Embedded Automation\mControl\third party\X10***
Axis IP Cameras ActiveX component	ActiveX component to allow mControl to display video stream from Axis cameras: File: ***ahscript_setup.exe*** Location: ***C:\Program Files\Embedded Automation\mControl\third party\Axis***

It may be necessary to install other components for use with mControl.

- Drivers for Z-Wave adapters
- Microphone or speaker drivers
- Some IP Cameras will require installation of the streaming video components (ActiveX)

Step 2 - Start mControl software

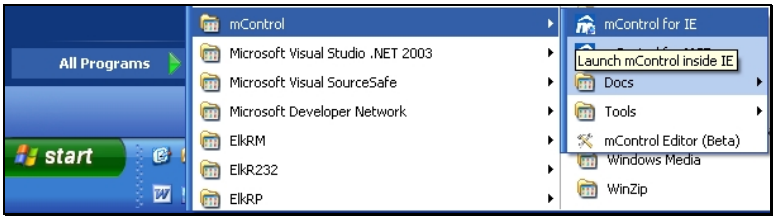
Before Starting mControl

To ensure proper operation of mControl, please do the following:

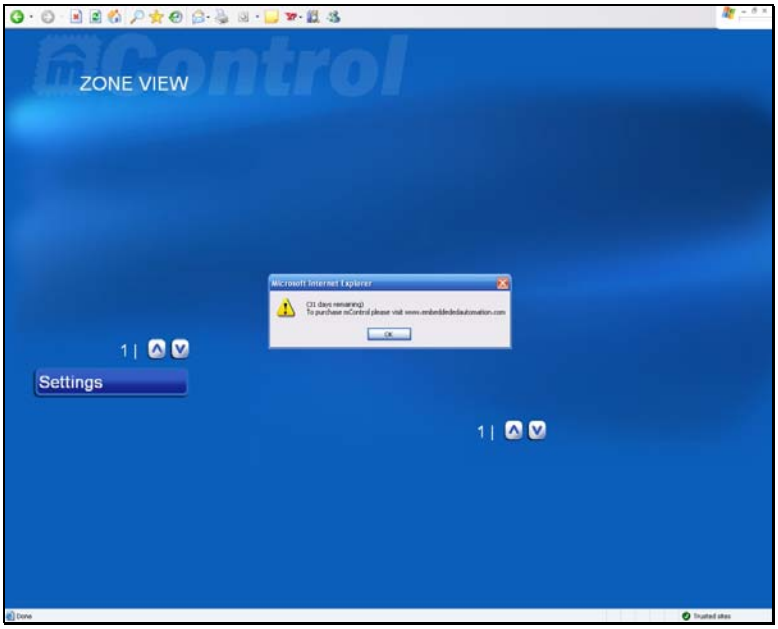
- It is highly recommended that you delete all content from your Temporary Internet Files location, before installation, to avoid any conflicts with previous content.
- Configure firewall settings to permit “mserver.exe” and ports 29990-29995.

Starting mControl for Internet Explorer

You can start mControl by using the Windows “Start” button, then the “All Programs” option, then the “mControl” folder and finally, the “mControl” program.



Alternatively, you can also use Internet Explorer. Open Internet Explorer (IE) and enter the following line in the address bar, http://localhost:29990/Default.aspx. For users of the mControl Add-In for Windows Home Server or to access mControl from a different PC, replace “localhost” with the IP of the PC that mControl is installed on.



Starting mControl within Media Center

You can access mControl by selecting “More Programs” area within “Media Center”.

Step 3 – Activating mControl

To activate your software, you will have to purchase a software license. Upon completing your purchase, you will be emailed a new license file, or for those retailers which provide a CD, the license file will be on your CD. This license file is not activated and you will have 10 days to activate this file.

mControl License from a Purchased CD

If you have purchased mControl on a CD, simply install the CD – your mControl license will be automatically installed.

- After installation, you may consider upgrading to the latest version of mControl, as outlined in Step 1.

If you have a more recent trial version installed already, all you need to do is copy the license file from the CD:

- Copy **mServer.exe.lic.cpy** file located in the root directory of the CD and paste it to your desktop.
- Rename the **mServer.exe.lic.cpy** file located on your desktop to **mServer.exe.lic**.
- Copy the file which you have renamed to **mServer.exe.lic** to C:\Program Files\EmbeddedAutomation\mControl\Server. Please ensure that you replace the trial license (also called **mServer.exe.lic**) with the purchased license.
- Once the purchased license is copied to the proper location, mControl must be restarted to use the new license. Reboot the computer or use the mControl Service Manager to restart mControl.

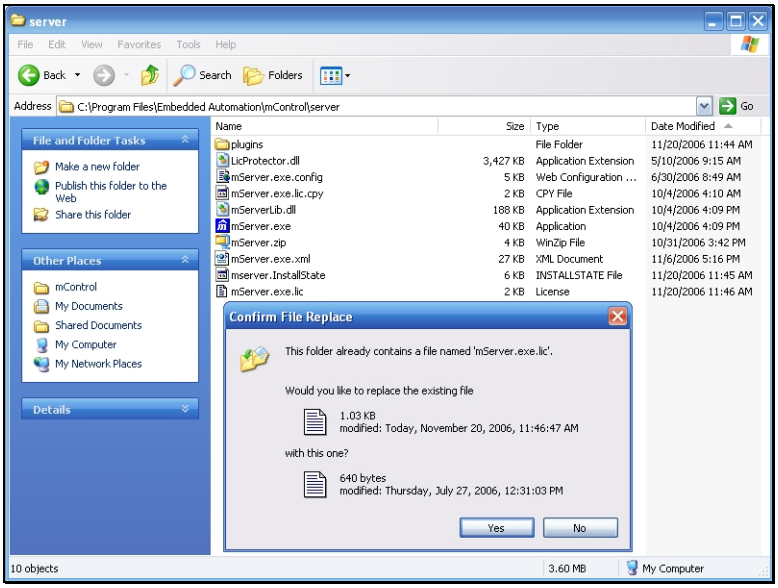
*Please ensure that both the **mServer.exe.lic** (mControl License) and the **mServer.exe.lic.cpy** (mControl License back-up) exist in the C:\Program Files\EmbeddedAutomation\mControl\Server directory.*

mControl License from an Online Purchase

mControl License on Windows XP or Windows Vista

If you have purchased mControl online, you will be emailed a license. This file is called **mServer.exe.lic**.

- If you haven't already, download the latest version of mControl and install it.
- Copy the **mServer.exe.lic** file and paste it into the following location: C:\Program Files\EmbeddedAutomation\mControl\Server. Please ensure that you replace the trial license (also called **mServer.exe.lic**) with the purchased license.
- Once the purchased license is copied to the proper location, mControl must be restarted to use the new license. Reboot the computer or use the mControl Service Manager to restart mControl.


server
File Edit View Favorites Tools Help
Back Search Folders
Address C:\Program Files\Embedded Automation\mControl\server
Go
File and Folder Tasks
Make a new folder
Publish this folder to the Web
Share this folder
Other Places
mControl
My Documents
Shared Documents
My Computer
My Network Places
Details
Name Size Type Date Modified
plugins File Folder 11/20/2006 11:44 AM
LicProtector.dll 3,427 KB Application Extension 5/10/2006 9:15 AM
mServer.exe.config 5 KB Web Configuration ... 6/30/2006 8:49 AM
mServer.exe.lic.cpy 2 KB CPY File 10/4/2006 4:10 AM
mServerLib.dll 188 KB Application Extension 10/4/2006 4:09 PM
mServer.exe 40 KB Application 10/4/2006 4:09 PM
mServer.zip 4 KB WinZip File 10/31/2006 3:42 PM
mServer.exe.xml 27 KB XML Document 11/6/2006 5:16 PM
mserver.InstallState 6 KB INSTALLSTATE File 11/20/2006 11:45 AM
mServer.exe.lic 2 KB License 11/20/2006 11:46 AM
Confirm File Replace
This folder already contains a file named 'mServer.exe.lic'.
Would you like to replace the existing file
1.03 KB
modified: Today, November 20, 2006, 11:46:47 AM
with this one?
640 bytes
modified: Thursday, July 27, 2006, 12:31:03 PM
Yes
No
10 objects
3.60 MB
My Computer

mControl License on Windows Home Server

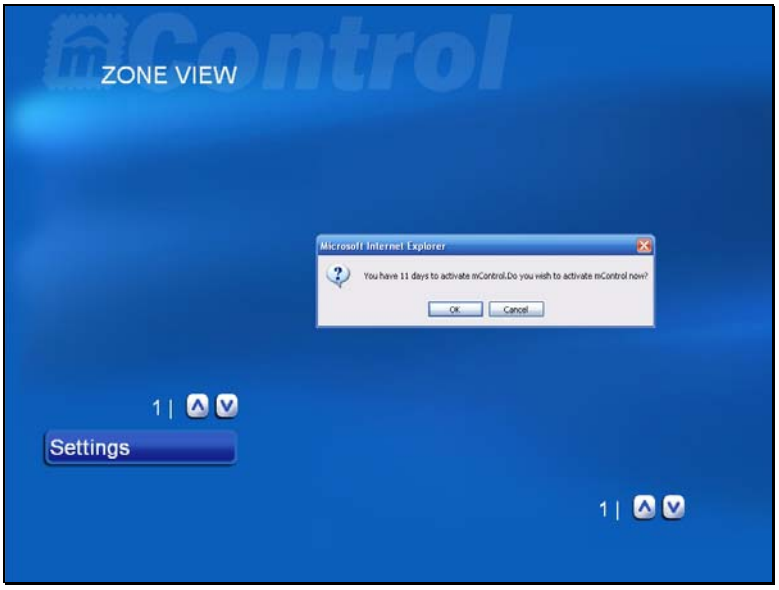
If you have purchased mControl online, you will be emailed a license. This file is called **mServer.exe.lic**.

- If you haven't already, download the latest version of mControl and install it.
- Copy the **mServer.exe.lic** file and paste it into your \\software share
- Use Remote Desktop to connect to your Windows Home Server machine
- Move the mServer.exe.lic file from your \\software share to the following location: C:\Inetpub\wwwroot\mControl\Server. Please ensure that you replace the trial license (also called **mServer.exe.lic**) with the purchased license.
- Once the purchased license is copied to the proper location, mControl must be restarted to use the new license. Reboot the computer or use the mControl Service Manager to restart mControl.

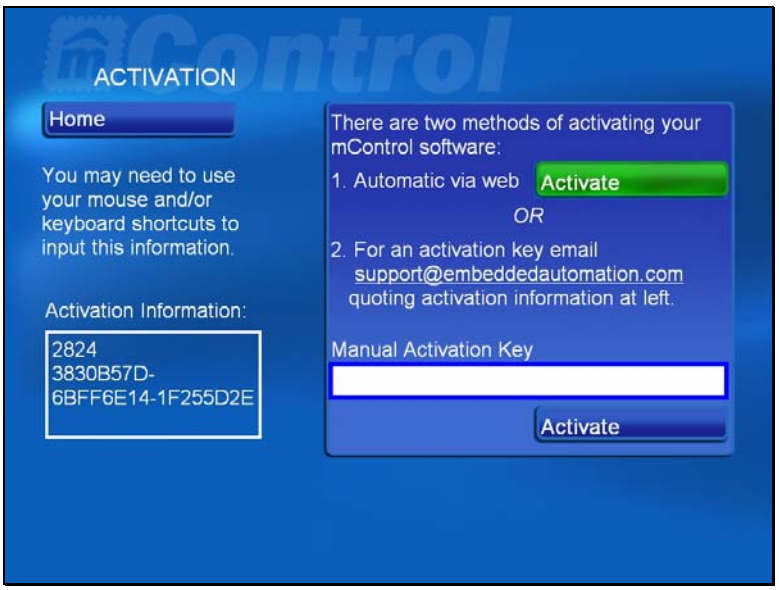
Activating the mControl License

Activating the mControl License using mControl for IE

Once mControl for IE has been restarted, you will be prompted to activate your purchased license. This activation process will remove all time restrictions from the software. You have 10 days to complete this activation.



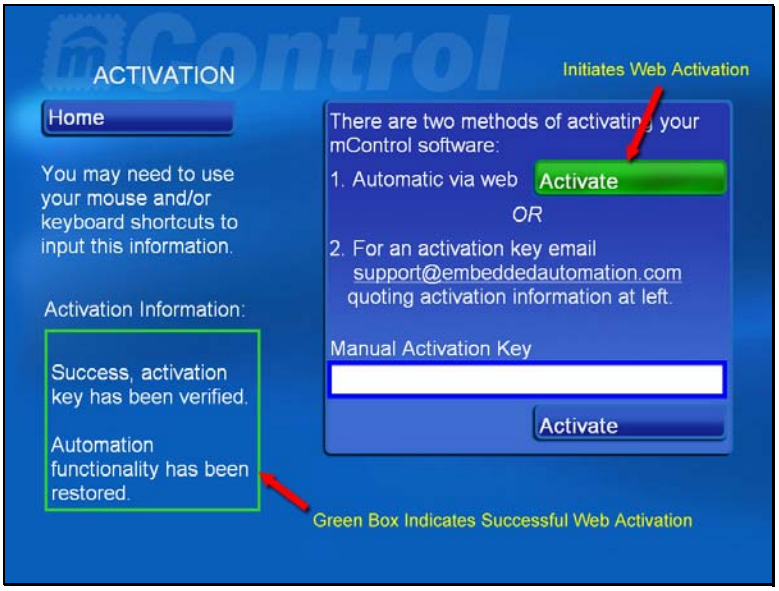
Upon selecting to activate, you will be sent to the “Activation” page, where the mControl license can be activated.



To perform a web activation, press the “Activate” button beside the “Automatic via web” label. Once pressed, mControl will automatically download the special codes to activate the mControl license.

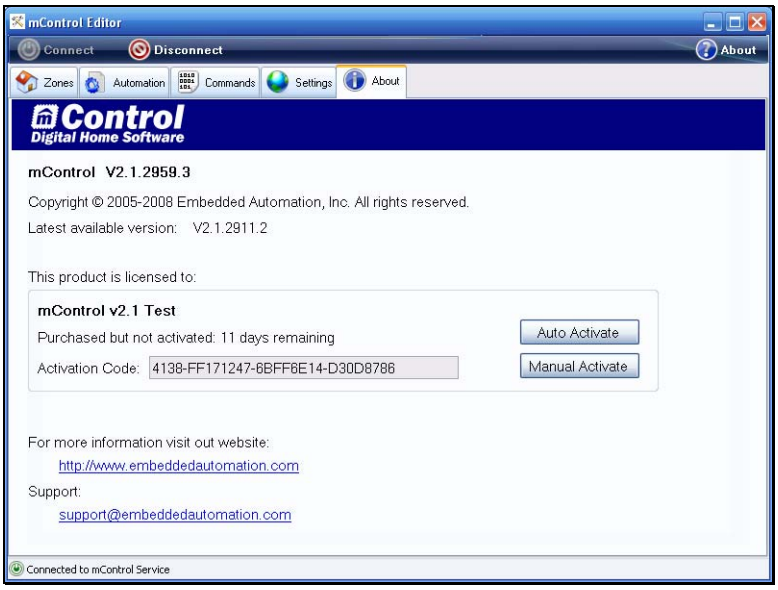
Web activation may take several seconds – please be patient – DO NOT press the “Activate” button multiple times.

Once successful, the box at the bottom left of the screen will turn green.

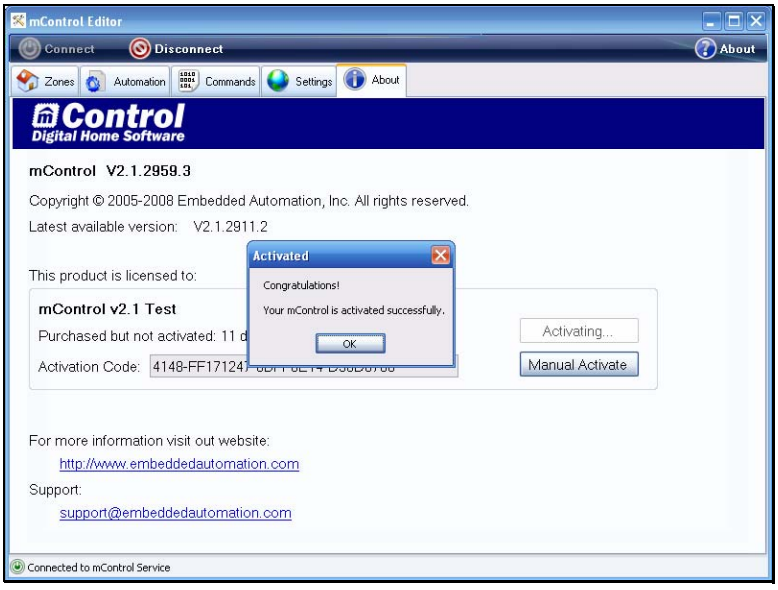

ACTIVATION
Initiates Web Activation
Home
There are two methods of activating your mControl software:
1. Automatic via web
Activate
OR
2. For an activation key email support@embeddedautomation.com quoting activation information at left.
You may need to use your mouse and/or keyboard shortcuts to input this information.
Activation Information:
Success, activation key has been verified.
Automation functionality has been restored.
Manual Activation Key
Activate
Green Box Indicates Successful Web Activation

Activating the mControl License using mControl Editor

Once mControl Editor has been started, you will be prompted to activate your purchased license. This activation process will remove all time restrictions from the software. You have 10 days to complete this activation.

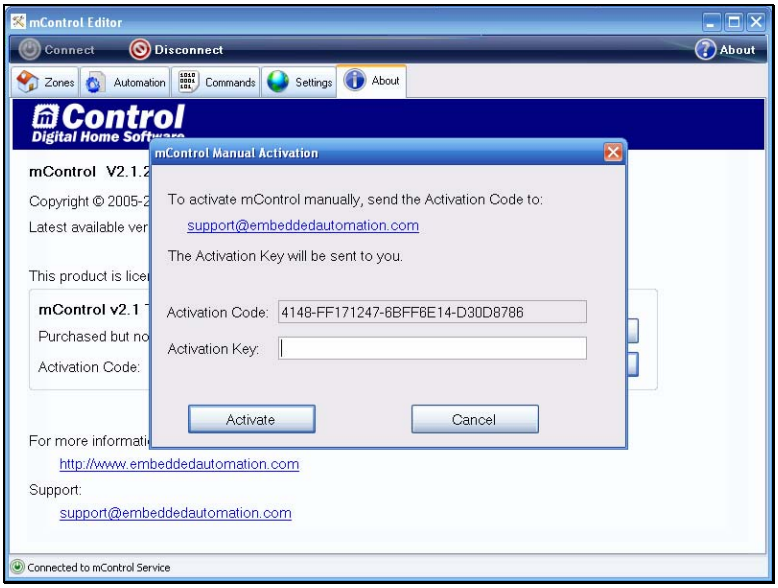


To perform a web activation, press the “Auto Activate” button. Once pressed, mControl will automatically download the key codes to activate the mControl license.



Using Manual Activation

Manual activation should be used when there is no Internet access available. From the mControl Editor select the “Manually Activate” to send an email with the required information to Embedded Automation. Embedded Automation will send a set of key codes to activate your license.



Moving mControl to a New Computer

The activated license will be associated to the machine on which mControl is installed. To move the license to another machine, you will have to contact Embedded Automation.

To move mControl to a new computer, you must:

- Download and install the latest version of mControl
- Stop the mControl (Automation) Service using the mControl Service Manager.
- Copy the mControl database file, called mHome.mdb, located in the C:\Program Files\Embedded Automation\mControl\data directory to the new computer
- Use the original license provided on CD or via email for the new computer. You can not use the license from the existing computer because, once activated, it is only usable by that computer. You are allowed 2 activations per license.
- If you have modified any of the XML files (e.g., mServer.exe.XML or mControlDataSet.XML), you must copy them to the new computer.
- Finally, for mControl to recognize the database, license and XML files, it must be restarted. Use the mControl Service Controller to restart mControl or simply reboot the new computer.

Using mControl with a Dial-up Internet Connection

Since the mControl UI client is a web-based interface, Windows and Internet Explorer assume an active Internet connection. It is possible to use mControl without an active Internet connection. If you are running mControl without an active Internet connection, for example, if you normally use dial-up to connect to the Internet. Use the following guidelines:

- Use the mControl short cuts provided under the “All Programs …” section. This will work for either running mControl using Internet Explorer or the Media Center interface. For Media Center users, you can also select mControl from the “More Programs” area.
- Please ensure that the “Work Offline” setting is not selected. This option is found under the “File” menu option in Internet Explorer. If “Work Offline” is checked, you may receive frequent reminders to connect to the Internet if there is no active Internet connection already established.
- For dial-up customers, we recommend using the “Dial whenever a network connection is not present” setting. This setting can set using Internet Explorer “Tools” menu option, then selecting “Internet Option” under the “Connection” tab.

Using mControl Software

mControl Components

mControl (Automation) Service

The mControl Automation Service, as the name implies, manages the automation sub-system for mControl. The mControl Service has a built-in web server and "serves" the user interfaces to the mControl Clients.

The mControl Automation Service runs as a Windows Service called "mHome Automation Service" – the process name for the mControl Service is "mServer.exe". The mControl Service will run automatically upon boot-up, does not require any user to be logged into Windows and will run until the PC is turned off.

The mControl (Automation) Service should be installed on a computer which:

- Is "Always On". If turned off, macros can not run
- Has the proper interfaces (e.g., USB, serial, Ethernet) to command devices and protocols
- Also, it is useful to minimize other software which may intrude on mControl operation

The mControl Service manages all macro operation. Hence, the PC must be on and mControl Service must be running, for all macros to execute at their required times and triggers.

mControl (User Interface) Clients

There are several mControl (User Interface) Clients available:

User Interface Client	Description
Internet Explorer User Interface	Browser-based (HTML) interface features: ➢ Control and configuration of mControl ➢ Keyboard and mouse use model ➢ Real-time status information ➢ Multiple skins ➢ Auto-recognition of Ultra-mobile PC (UMPC) resolution Requires: ***Internet Explorer 6.0 or higher*** Access: ***Via "mControl for IE" shortcut from Program Menu or directly using*** http://localhost:29990/default.aspx. (For remote access use http://IP_address:29990/default.aspx)
Windows XP Media Center 2005 Edition User Interface	Browser-based (HTML) interface features: ➢ Supports operation via Media Center remote control ➢ Text entry via remote control's triple-tap input method ➢ Control and configuration of mControl ➢ Real-time status information Requires: ***Windows XP MCE 2005 or Windows Vista MC*** Access: ***Via "mControl for MCE" shortcut from Program Menu, within the More Programs area of MCE 2005 or with the Program Library area of Windows Vista MC.***
Windows Vista User Interface	Media Center Mark-up Language (MCML) interface features: ➢ High-fidelity graphical user interface ➢ Supports operation via Media Center remote control ➢ Control of mControl ➢ Real-time status information Requires: ***Windows Vista MC*** Access: ***Via "mControl for Vista" shortcut from Program Library of Windows Vista MC***
Windows Mobile User Interface	Compact browser (HTML) interface features: ➢ Simplified control of mControl (devices and macros only) ➢ Real-time status information Requires: ***Windows Mobile 5.0 or higher*** Access: ***Via*** http://ServerIPAddress:29990/mobile.aspx. (for Windows XP/Vista) ***or via*** http://Server IPAddress/mControl/mobile.aspx (for Windows Home Server)

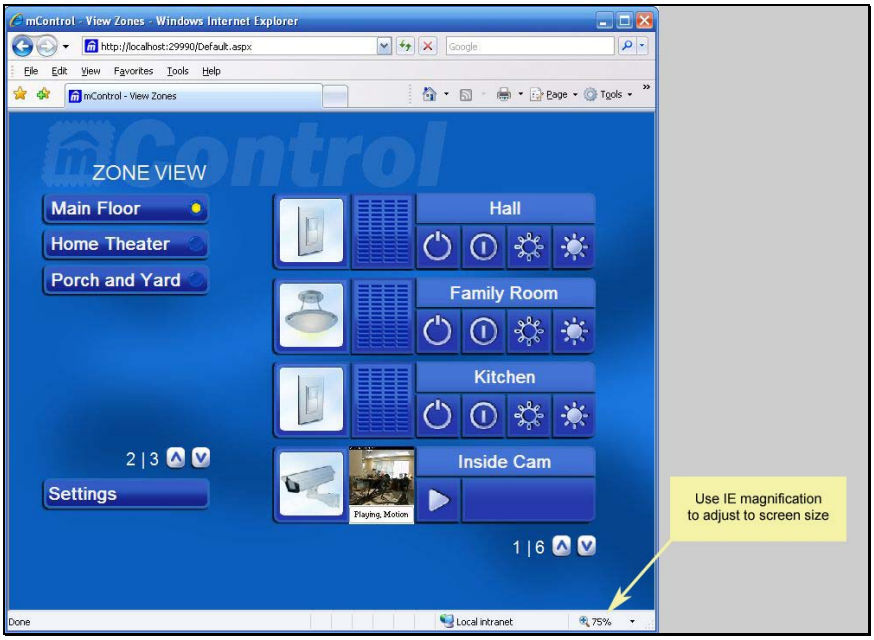
The mControl Service must be running for any of the mControl clients to be operational.

mControl and Internet Explorer

mControl works with Internet Explorer 6.0 and higher. Use the “mControl for IE” shortcut provided as part of the Program Menu or enter the URL associated with mControl. If you are running IE on the same machine as the mControl (Automation) Service, enter http://localhost:29990/default.aspx in to the address field. To access mControl on a different PC on your local area network, enter http://[IP address of the PC with mControl]:29990/default.aspx.

To refine your view of the mControl using an Internet Explorer client, the following options are available:

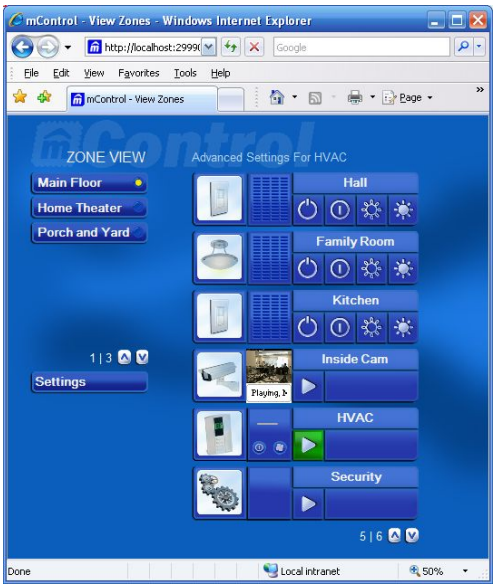
1. **Use the magnification feature within Internet Explorer 7.0**. This feature allows you to view the entire mControl screen on low-resolution monitors or to fully view mControl on a minimized window.



2. **Use alternate mControl styles**. This feature provides different views (skins) for mControl. Use the Settings [Configuration] button to access the Styles settings.

3. **Customizing the mControl graphics engine**. To view more elements (e.g., devices) per page, use *Configuring the mControl User Interface* section of this manual to customize the styles.

   The following screen is the result modifying the VIEWZONE_MAIN_ROWS for Blue-Static (IE) parameter within the mControlDataSet.XML file – allowing for viewing 6 rows of devices instead of the default 4.



Touch Screen Operation

Most mControl clients can be operated via a touch screen interface, though there is no provision for entering information, only controlling automation.

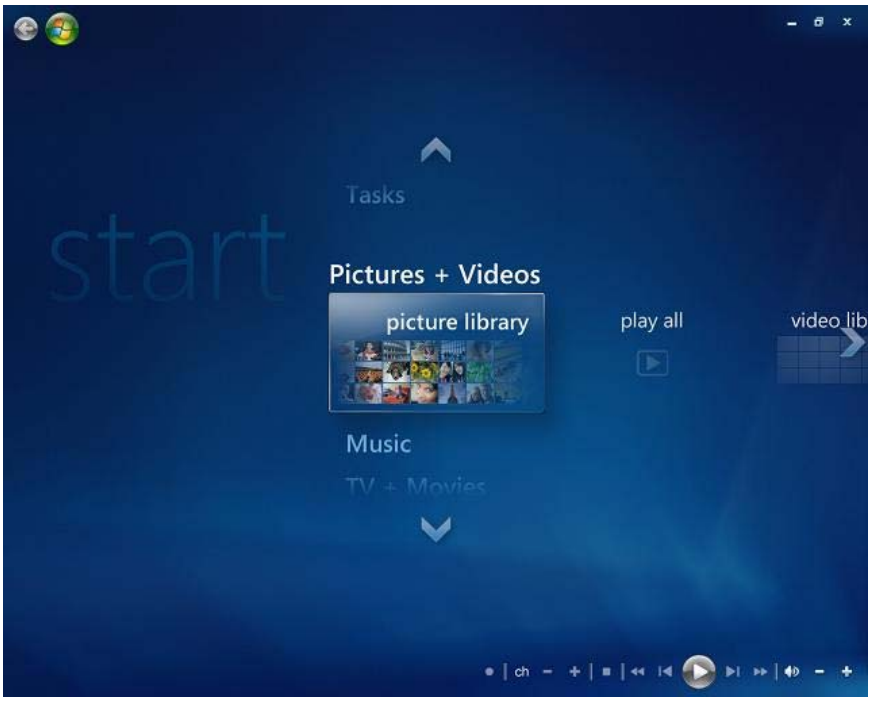
Examples of touch screen interfaces are:

- In-wall or wall-mount computers
- Table-side touch screen computers
- Mobile touch screen computer (e.g., Samsung Q1 Ultra-Mobile PCs)

The following mControl clients lend themselves to touch screen operation:

- mControl Internet Explorer User Interface. When used within Internet Explorer, consider using the Full Screen (F11) option and hiding all tool and status bars.
- mControl Media Center User Interfaces (MCE 2005 and Vista).

Microsoft Vista MC provides built-in touch screen navigation capabilities. For more information on this, please visit: http://blogs.gotdotnet.com/astebner/archive/2006/08/29/730866.aspx - this requires setting Windows Vista registry values.



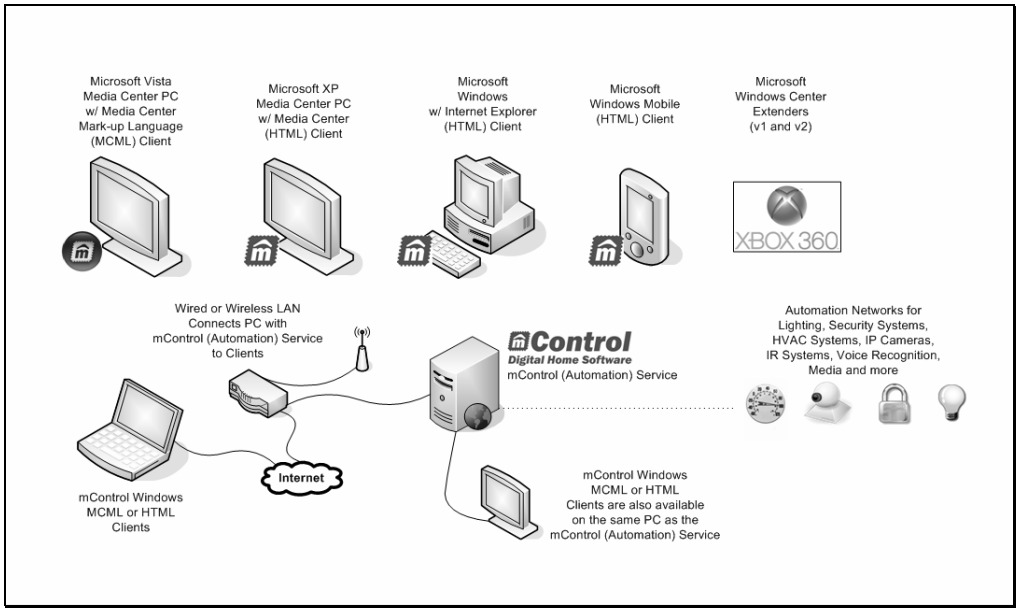
Media Center Extenders

If you have installed mControl on a Windows Media Center computer (MCE 2005 or Vista MC) or if you have registered a link to mControl from a Windows Media Center computer (MCE 2005 or Vista MC), mControl is available to any attached Windows Media Center Extenders, including Xbox 360 systems.

Interaction Between the mControl (Automation) Service and mControl Clients

The mControl (Automation) Service has built-in capability to "serve" multiple mControl Clients simultaneously.

- These clients can be on the same machine, on other machines on the local area network or remote computers which have access to the local area network based on your router's settings.
- Clients can be closed at any time without affecting the operation of the mControl (Automation) Service, which will continue to run in the background. Clients are only required to command devices manually or to the check status of devices.
- Macro operation happens on the computer with the mControl (Automation) Service – no clients are involved.
- All clients can perform automation commands and will receive active status information. All automation commands are queued within the mControl (Automation) Service to ensure collision free operation.


Microsoft Vista Media Center PC w/ Media Center Mark-up Language (MCML) Client
Microsoft XP Media Center PC w/ Media Center (HTML) Client
Microsoft Windows w/ Internet Explorer (HTML) Client
Microsoft Windows Mobile (HTML) Client
Microsoft Windows Center Extenders (v1 and v2)
XBOX 360
Wired or Wireless LAN Connects PC with mControl (Automation) Service to Clients
mControl Digital Home Software
mControl (Automation) Service
Automation Networks for Lighting, Security Systems, HVAC Systems, IP Cameras, IR Systems, Voice Recognition, Media and more
Internet
mControl Windows MCML or HTML Clients
mControl Windows MCML or HTML Clients are also available on the same PC as the mControl (Automation) Service

Ethernet Ports Used by mControl

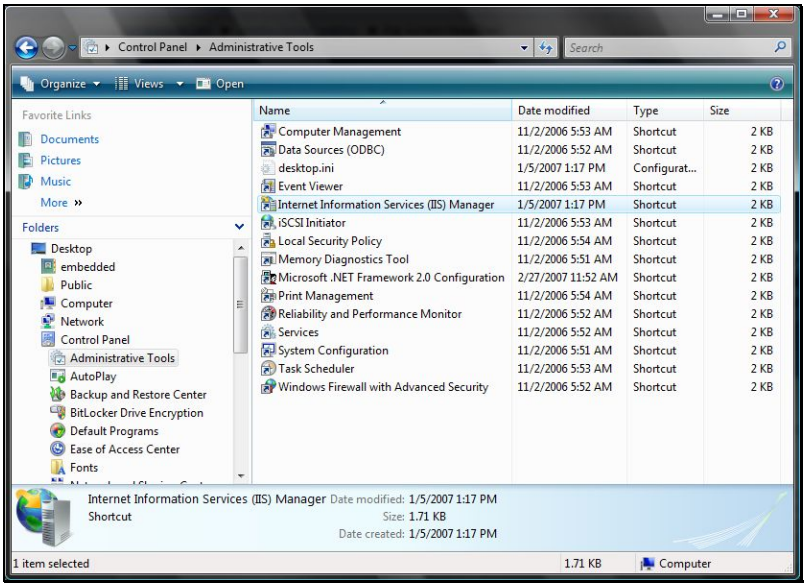
Port	Description
29990	Port between mControl's internal web server and browser clients
29991	HTTP port between mControl service and clients. Recommended for use when firewall issues prevent the TCP communications.
29992	TCP port between mControl service and clients.
29993	TCP port used by mControl to listen for messages from external systems (e.g., IP cameras).
29994	UDP port used by mControl service to send messages (e.g. status msgs)
29995	UDP port used by mControl clients to send messages

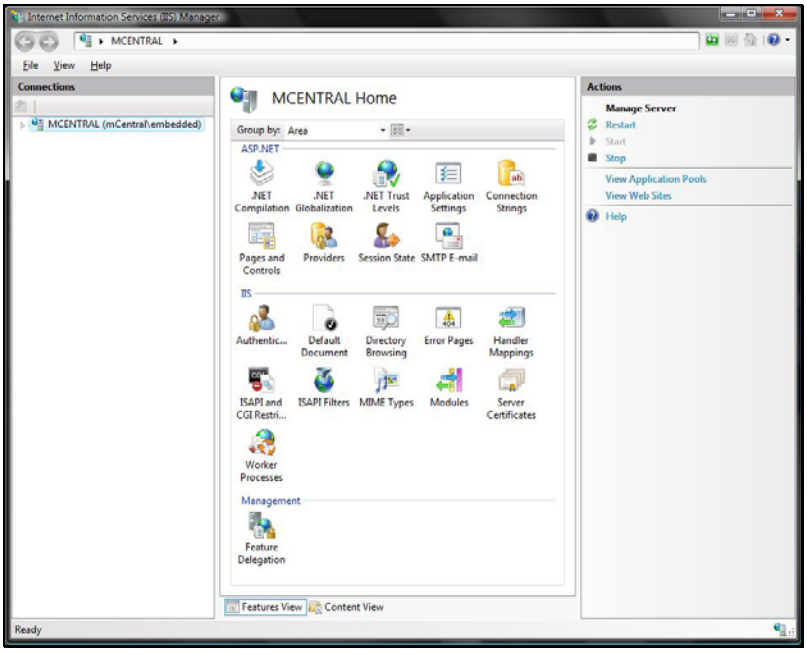
mControl and Internet Information Services (IIS)

mControl has a built-in web server which serves client information. However, it is also possible to use alternate web servers like Microsoft's Internet Information Services (IIS) – for example, to allow HTTPS/SSL configurations of mControl.

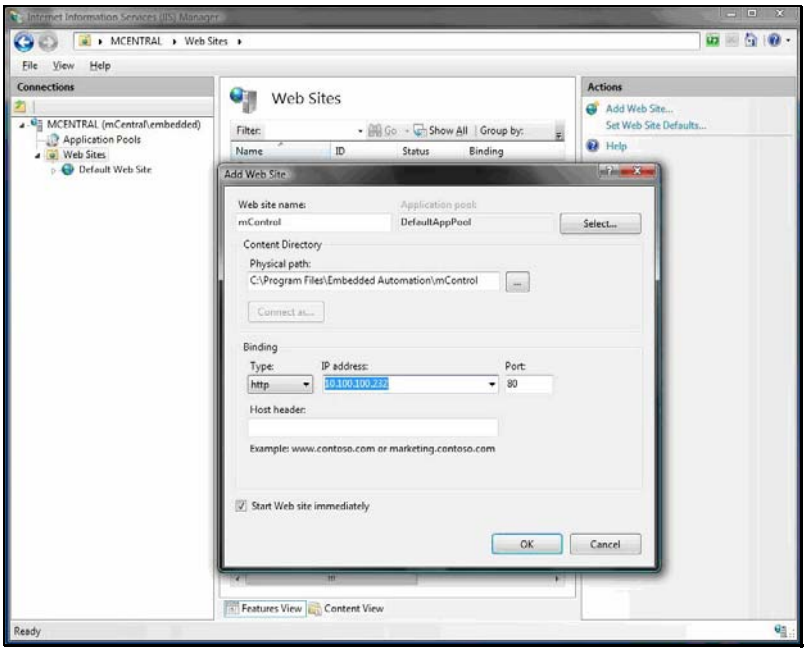
To do this, use the following steps to configure mControl to use IIS:

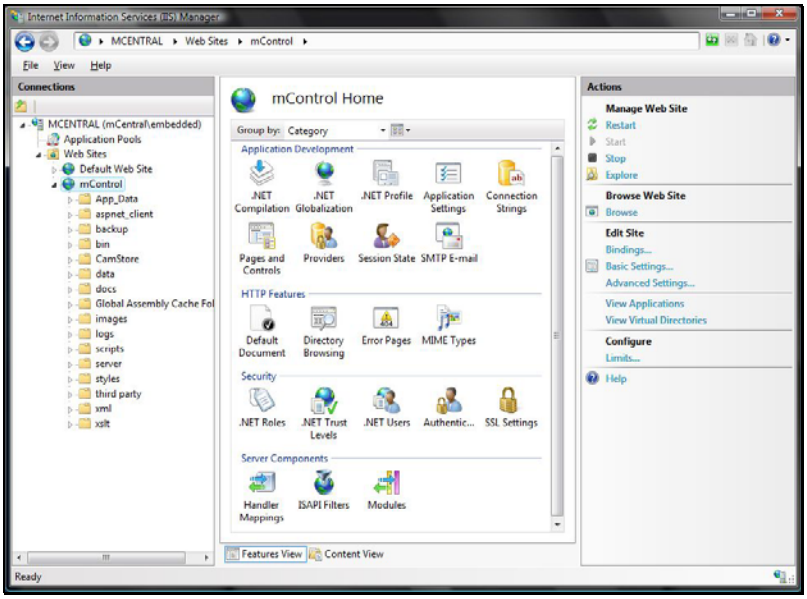
- Confirm availability of IIS on your platform. IIS is not available on all operating systems. Please refer to http://en.wikipedia.org/wiki/Internet_Information_Services for more information.
- Start IIS from Control Panel's Administrative Tools


Control Panel ▸ Administrative Tools
Search
Organize
Views
Open
Favorite Links
Documents
Pictures
Music
More »
Folders
Desktop
embedded
Public
Computer
Network
Control Panel
Administrative Tools
AutoPlay
Backup and Restore Center
BitLocker Drive Encryption
Default Programs
Ease of Access Center
Fonts
Name
Date modified
Type
Size
Computer Management 11/2/2006 5:53 AM Shortcut 2 KB
Data Sources (ODBC) 11/2/2006 5:52 AM Shortcut 2 KB
desktop.ini 1/5/2007 1:17 PM Configurat... 2 KB
Event Viewer 11/2/2006 5:53 AM Shortcut 2 KB
Internet Information Services (IIS) Manager 1/5/2007 1:17 PM Shortcut 2 KB
iSCSI Initiator 11/2/2006 5:53 AM Shortcut 2 KB
Local Security Policy 11/2/2006 5:54 AM Shortcut 2 KB
Memory Diagnostics Tool 11/2/2006 5:51 AM Shortcut 2 KB
Microsoft .NET Framework 2.0 Configuration 2/27/2007 11:52 AM Shortcut 2 KB
Print Management 11/2/2006 5:54 AM Shortcut 2 KB
Reliability and Performance Monitor 11/2/2006 5:52 AM Shortcut 2 KB
Services 11/2/2006 5:52 AM Shortcut 2 KB
System Configuration 11/2/2006 5:51 AM Shortcut 2 KB
Task Scheduler 11/2/2006 5:53 AM Shortcut 2 KB
Windows Firewall with Advanced Security 11/2/2006 5:52 AM Shortcut 2 KB
Internet Information Services (IIS) Manager Date modified: 1/5/2007 1:17 PM
Shortcut Size: 1.71 KB
Date created: 1/5/2007 1:17 PM
1 item selected
1.71 KB
Computer



- Right click on Web Sites and add mControl as a website (Vista) or virtual directory (non-Vista) by pointing to the `C:\Program Files\Embedded Automation\mControl` directory.





- Configure the mControl (Automation) Service to **not** use the built-in web server. To do this, navigate to the C:\Program Files\Embedded Automation\mControl\server directory and open the mServer.exe.config file within a text editor. Modify the mAuServer.WebHostUse setting to be 'false', which disables the built-in web server.

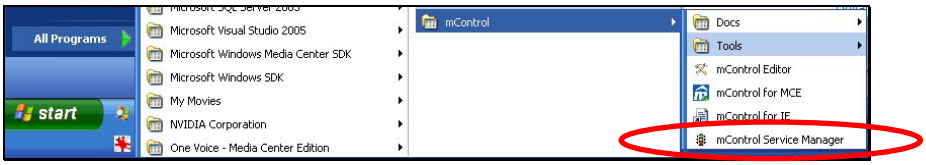
```
<!-- Internal webserver parameters -->
<add key="mAuServer.WebHostUse" value="false"/>
```

- Restart the mControl (Automation) Service to take the changes.

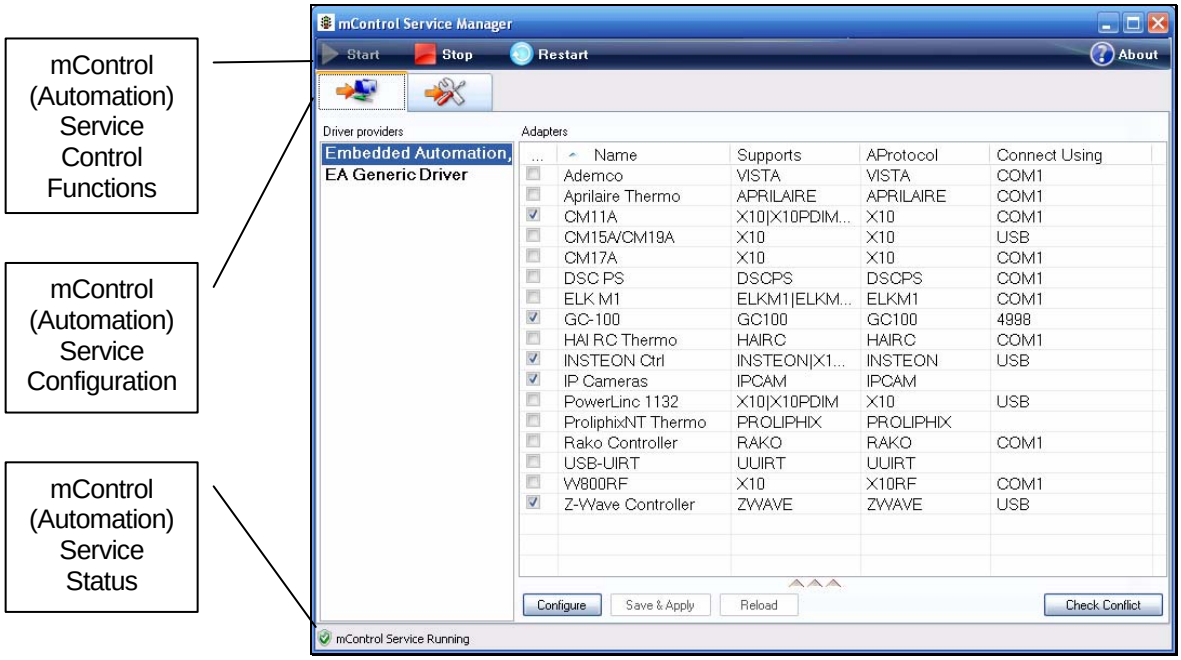
- Navigate to the default mControl page of the IIS web server using http://localhost/mControl.

mControl Service Manager

mControl setup installs a utility, called the mControl Service Manager, which can be used to quickly and easily administer the mControl (Automation) Service. The mControl Service Manager is automatically installed and is accessible from the mControl folder:



Once started, the mControl Service Manager dialog box is shown:



mControl (Automation) Service Control Functions

Control Function	Function Description
Start	Use this button to start the mControl (Automation) Service You may need to do this if you had previously stopped mControl
Stop	Use this button to stop the mControl (Automation) Service You may need to do this if you need to make custom adjustments to your mControl configuration.
Restart	Use this button stop the mControl (Automation) Service You may need to do this to re-initialize mControl

mControl (Automation) Service Configuration

Option	Option Description
	Manage mControl Driver Collections
	Manage mControl (Automation) Service Options

mControl (Automation) Service Status

Option	Status Description
	mControl (Automation) Service is running
	mControl (Automation) Service is not running

Managing mControl Driver Collections

Use the left pane of the Manage mControl Drivers tab to select the driver collection to configure. Each driver collection can contain one or more drivers. Once a driver collection is selected, the drivers associated with this collection can be viewed and configured on the right pane.

Option	Driver Collection Description
Embedded Automation	By default, mControl ships with a collection of “native” drivers. These drivers are packaged under the Embedded Automation collection. The information for this collection is kept within the mServer.exe.xml file.
EA Generic Driver	The EA Generic Driver allows users to control Audio/Visual and other serial or IP components.

To configure a driver, use the following guidelines:

- To enable or disable a driver, double-click the check box provided for the driver
- To configure settings for the driver, select the “Configure” button and make changes in the dialog box associated with that driver
- Use the “Check Conflict” button to check if there are any serial port conflicts – that is, more than one driver using the same serial port.
- If you have made changes to the driver collection, but do not want to keep them, select the “Reload” button, which will reload the last saved information.
- If you have made changes to the driver collection, for them to take effect, you will have to select the “Save & Apply” button, which saves the configuration file. If the mControl

(Automation) Service is already running, you will be asked to confirm whether these changes should go into effect.

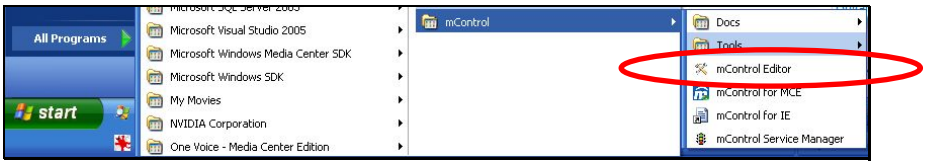
mControl (Automation) Service Options

The following options are available for the mControl (Automation) Service:

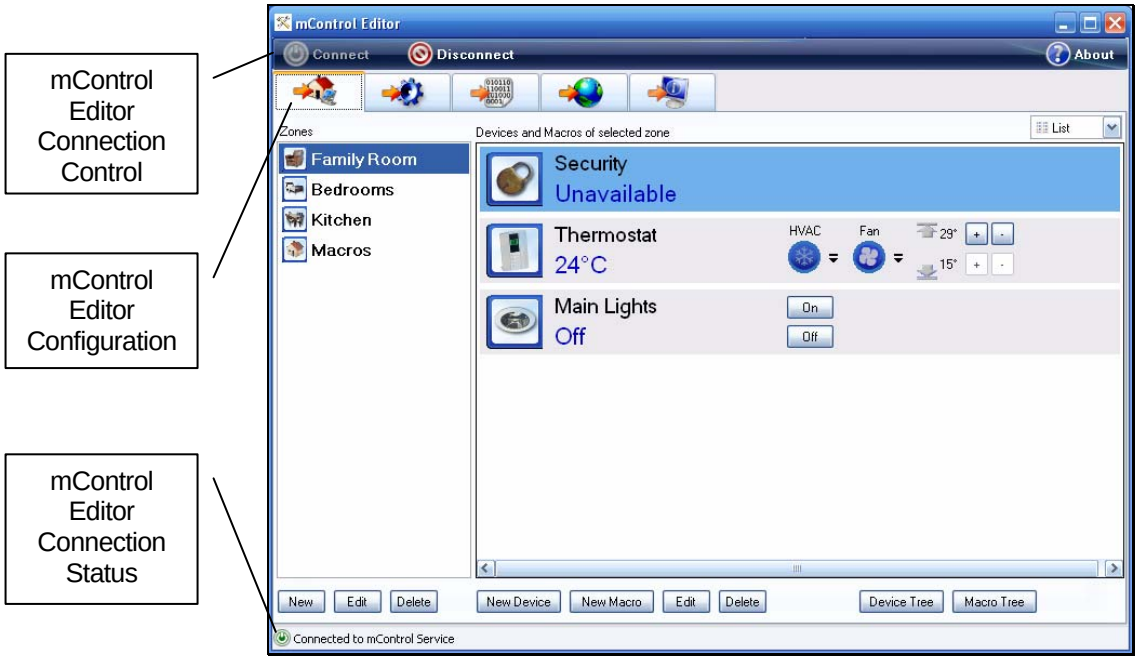
Option	Description
System wide debug level	Amount of information written to the mControl log files. Default: 5 (Typical)
Log file count	Number of mControl log files used. Default: 9
Log file size	Size of each log file Default: 512KB
Log delayed	If enabled, wait until log buffer is full before writing to log file. If disabled, write information as it becomes available. Default: Checked
Log buffer size	Size of the log buffer Default: 512B
Check toggle IR	If enabled, mControl allows the use of toggling remotes, like the Windows Media Center remote, treating the toggles for a button as one command
Enable run	If enabled, allow mControl to run external applications. Default: Unchecked
Use built-in web	If enabled, use mControl's built-in web server. If disabled, other web servers (e.g., IIS) may be used. Default: Checked
Built-in web host port	Port used by mControl's built-in web server. Default: 29990
Tcp server port	Port used by mControl to listen for incoming commands from other systems/devices. Default: 29993

mControl Editor

mControl setup automatically installs the mControl Editor utility, which can be used to quickly and easily manage mControl data. The mControl Editor is automatically installed and is accessible from the “mControl” folder in the mControl program area:



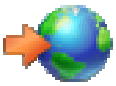
Once started, the mControl Editor automatically connects to the mControl (Automation) Service and retrieves the current data configuration. *To modify data using the mControl Editor, the mControl (Automation) Service must be running.*



mControl Editor Connection Control

Control Function	Function Description
	Use this button to connect to the mControl (Automation) Service
	Use this button to disconnect from the mControl (Automation) Service

mControl Editor Configuration

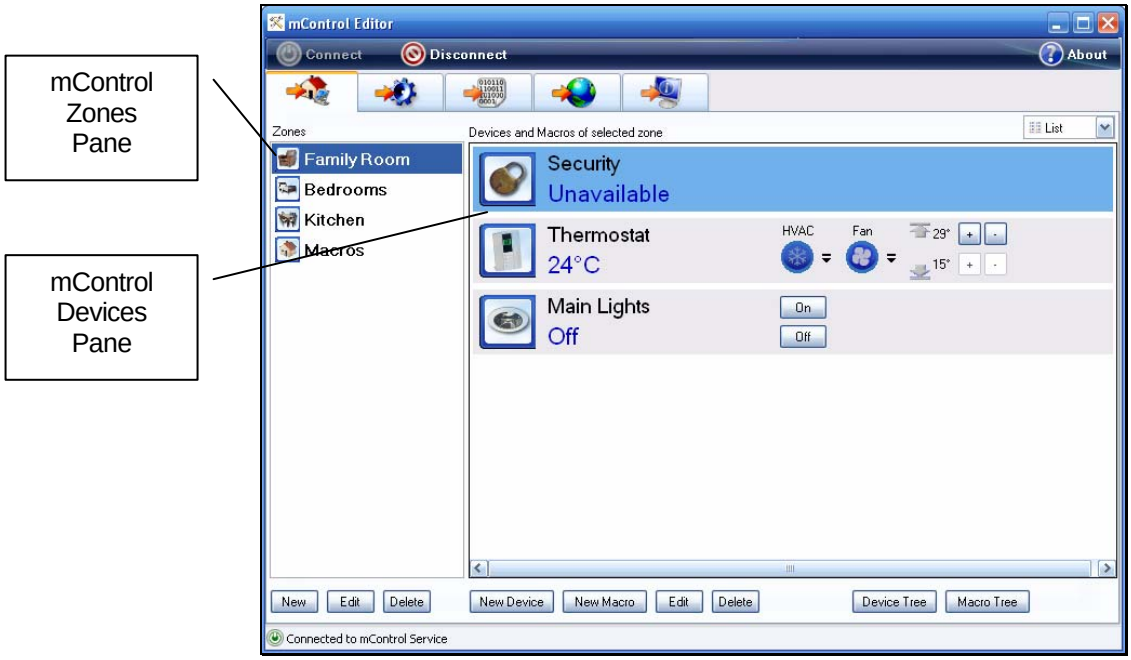
Option	Option Description
	Manage mControl Zones and Devices
	Manage mControl Macros
	Manage mControl IR and External Trigger Commands
	Manage mControl Settings
	Manage mControl Version and License Information

mControl Editor Connection Status

Control Function	Function Description
	Connected to the mControl (Automation) Service
	Disconnected from the mControl (Automation) Service

Managing mControl Zones and Devices

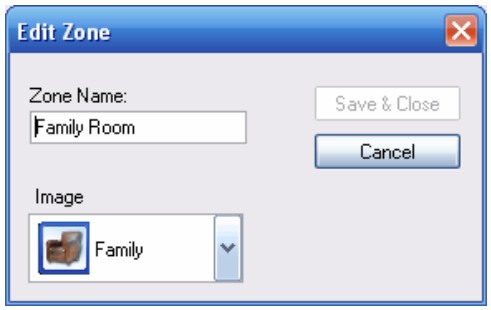
Use the Manage mControl Zones and Devices tab to manage mControl zones and devices.



Managing mControl Zones

Use the mControl Zones pane to select and manage zones.

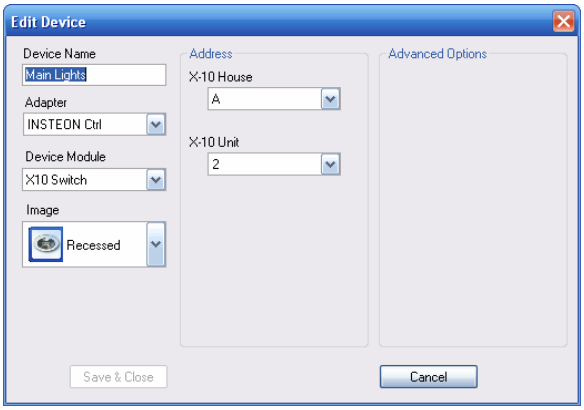
- Use the “New” button to create a new zone
- Use the “Edit” button to edit an existing zone
- Use the “Delete” button to delete an existing zone
- To change the order of display of a zone, select and drag it to the required location



Managing mControl Devices

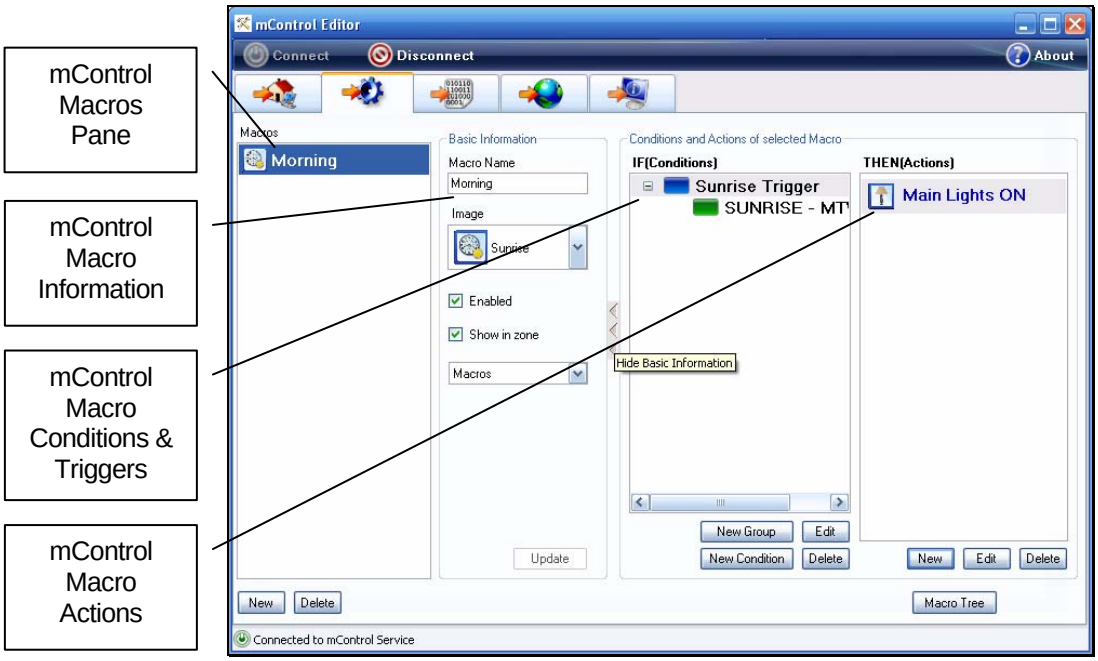
Use the mControl Devices pane to select, control and manage devices for a selected zone.

- Use the “New Device” button to create a new device in the selected zone
- Use the “New Macro” button to create a new macro in the selected zone
- Use the “Edit” button to edit an existing device in the selected zone
- Use the “Delete” button to delete an existing device in the selected zone
- Use the “Device Tree” to see a hierarchical view of zones and devices
- Use the “Macro Tree” to see a hierarchical view of macros, triggers, conditions and actions
- To change the order of display of a device in the selected zone, select and drag it to the required location
- To move a device to a different zone, select and drag it to the required zone in the left pane
- To copy a device to a different zone, while holding the <Ctrl> key, select and drag it to the required zone in the left pane



Managing mControl Macros

Use the Manage mControl Macros tab to manage mControl macros including associated information, conditions, triggers and actions.



Managing mControl Macros

Use the mControl Macro Pane to select and manage macros.

- Use the “New” button to create a new macro
- Use the “Delete” button to delete an existing macro

Managing mControl Macro Information

Use the mControl Macro Information Pane to update information related to the selected macro.

- In the “Macro Name” field, enter the name of the selected macro
- Use the “Image” selection field to select the image for the selected macro
- Use the “Enabled” check mark to enable the macro for operation. If unchecked, the macro will be disabled and will not run even if the trigger and condition items are met.
- Use the “Show in Zone” button to show the selected macro in a zone. If unchecked, the macro will still exist, but be hidden.
- Use the “Macro” selection field to select the zone within which selected macro should be shown.
- Use the “Hide/Unhide Pane” chevrons (3 triangles) to hide/unhide the mControl Macro Information Pane.

Managing mControl Macro Conditions and Triggers

Use the mControl Macro Conditions and Triggers Pane to manage conditions and triggers for the selected macro.

- Use the “New Group” button to create a new trigger for the selected macro
- Use the “New Condition” button to create a new condition for the selected macro
- Use the “Edit” button to edit the selected trigger or condition for the selected macro
- Use the “Delete” button to delete the selected trigger or condition for the selected macro
- If the trigger group has more than one condition, use the “+” or “-” elements to show or hide the conditions
- To move a condition to a different trigger, select and drag it to the required trigger in the same pane
- To copy a condition to a different trigger, while holding the <Ctrl> key, select and drag it to the required trigger in the same pane

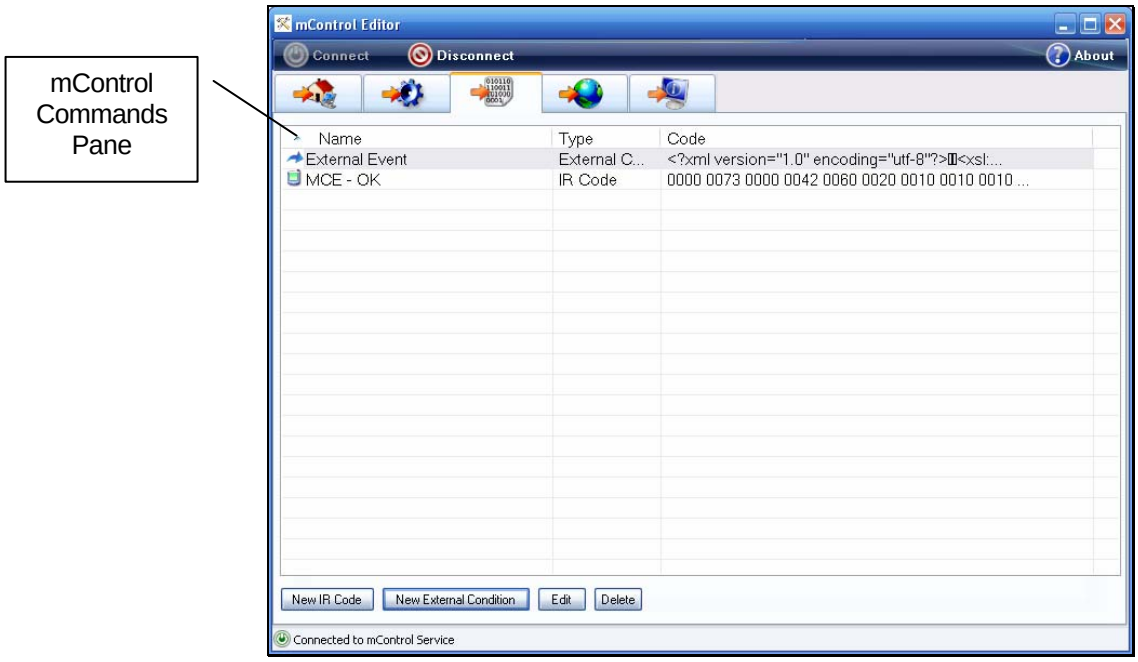
Managing mControl Macro Actions

Use the mControl Macro Actions Pane to manage actions for the selected macro.

- Use the “New” button to create a action for the selected macro
- Use the “Edit” button to edit the selected action for the selected macro
- Use the “Delete” button to delete the selected action for the selected macro
- To move a action, select and drag it to the required location in the same pane

Managing mControl IR and External Trigger Commands

Use the Manage mControl IR and External Trigger Commands tab to manage mControl IR and external trigger commands.



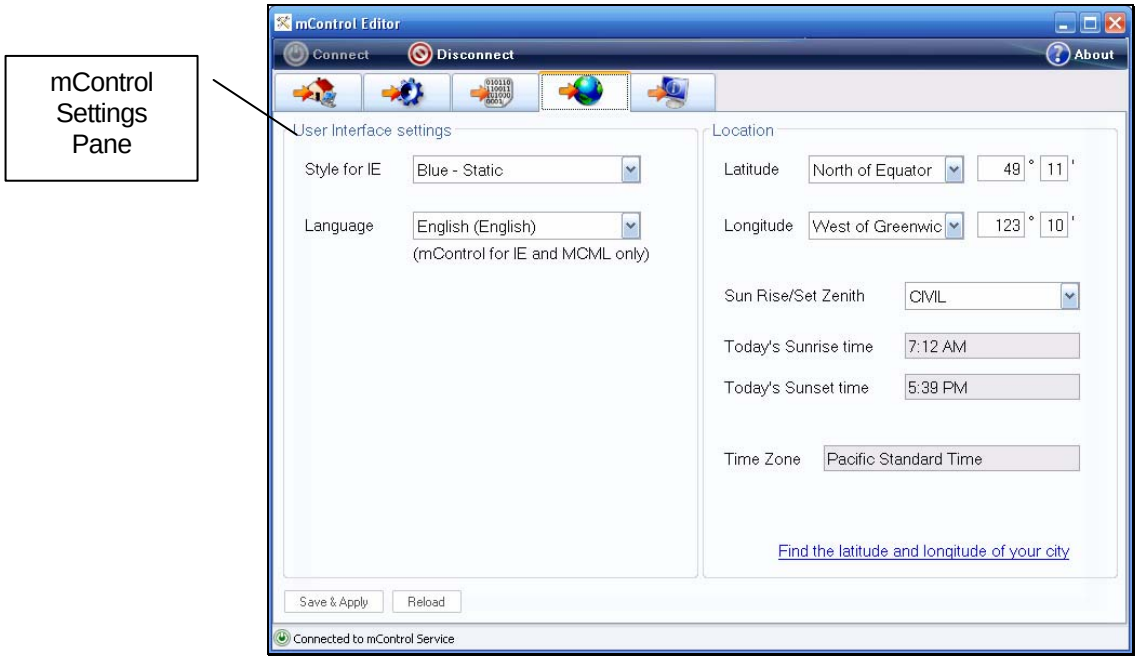
Managing mControl Commands

Use the mControl Commands Pane to select and manage IR and external trigger commands.

- Use the “New IR Code” button to create a new IR command
- Use the “New External Event” button to create a new external trigger command
- Use the “Edit” button to edit an existing IR or external trigger command
- Use the “Delete” button to delete an existing IR or external trigger command

Managing mControl Settings

Use the Manage mControl Settings tab to manage mControl settings.



Managing mControl Settings

Use the mControl Settings Pane to manage mControl settings.

- Use the “Style for IE” field to select the mControl for IE display style
- Use the “Language” field to select the language to use
- Use the “Latitude” and “Longitude” fields to enter your current location for sunset/sunrise calculations
- Use the “Sun Rise/Set Zenith” field to select the method of sunrise/sunset calculation
- Use the “Save & Apply” button to save changes made on the mControl Settings pane
- Use the “Reload” button to retrieve the settings from the last save

Managing mControl Version and License Information

Use the Get Information on mControl and License Management tab to view information on your mControl install and manage the mControl license.

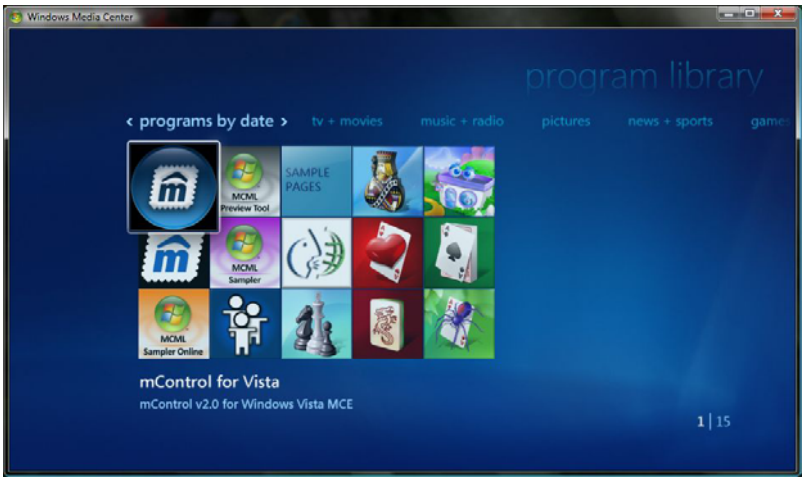
Manage mControl Version and License Information

Use the mControl Information Pane to manage mControl version and license information

- The version and build number of the installed mControl are shown at the top of the mControl Information Pane
- The latest version available on Embedded Automation's website is shown below the installed version
- The "This product is licensed to" area shows the license information including the name and state of the license
- If the license is currently un-activated, use the "Auto Activate" button to activate the license using web activation.
- If the license is currently un-activated, use the "Manual Activate" button to enter the key for the license.

mControl Client for Windows Vista Media Center

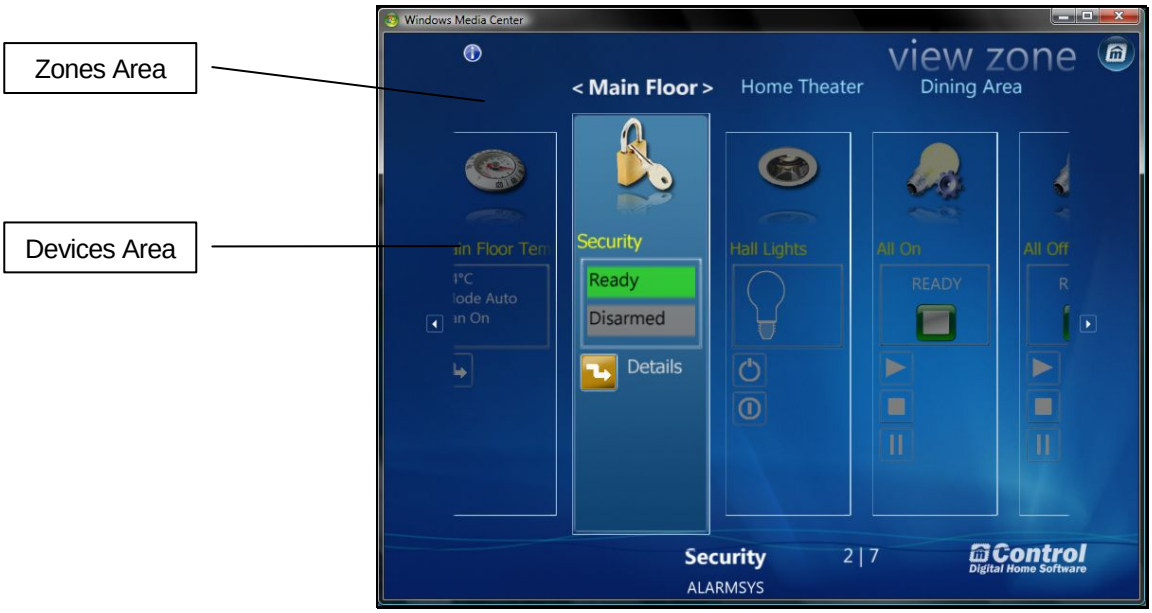
The mControl Client for Windows Vista Media Center is accessible from the Online Media – Program Library.



The mControl Client for Windows Vista Media Center provides status and operation control of devices and macros. To configure mControl – including defining zones, devices and macros - you must use the mControl Client for Internet Explorer (or Media Center 2005) or the mControl Editor.

Zone View Screen

The Zone View screen, which is considered the “main menu” of mControl, provides a summary of all the defined zones and all devices within a selected zone. From this screen, you can access all of your Zones and Devices.



Zones Area

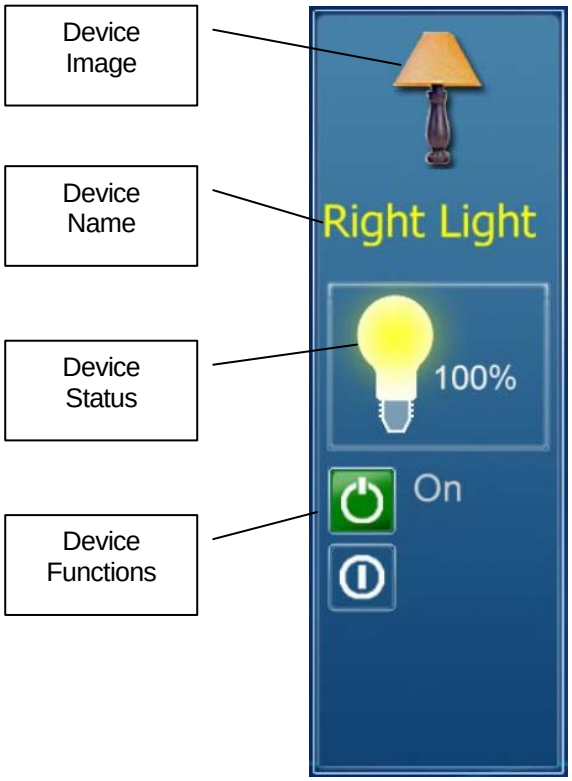
This area provides a list of all the user-defined Zones. Each Zone can hold 0 or more Devices. Zones naming is very flexible – a zone can represent:

- Actual rooms in house – for example, “Home Theater”
- A functional area of house – for example “Main Floor”
- A generic container name – for example “My Macros”

The “active” zone, or the one currently selected, is denoted by a larger font and angle brackets. To select a new active zone, cursor to it and press OK.

Devices Area

This area provides a list of all the devices for the “selected” zone.



- **Device Image** – An icon or image for the device, as configured by the user
- **Device Status** – Current status of the device and is updated in real-time.
- **Device Name** – The name of the device, as configured by the user
- **Device Functions** – The functions that the device is capable of performing (e.g., ON, OFF, DIM, BRIGHT, SHOW, PLAY, etc.)

Switches, Lamp and Appliance Devices

Device Status	Meaning
	Device is OFF
	Device is ON at 100% value

Device Function	Operation	Supported With
	Turn ON device	All binary (ON/OFF) and multi-level (dimmer) modules.
	Turn OFF device	
	DIM device 25%	All multi-level (dimmer) modules.
	BRIGHTEN device 25%	

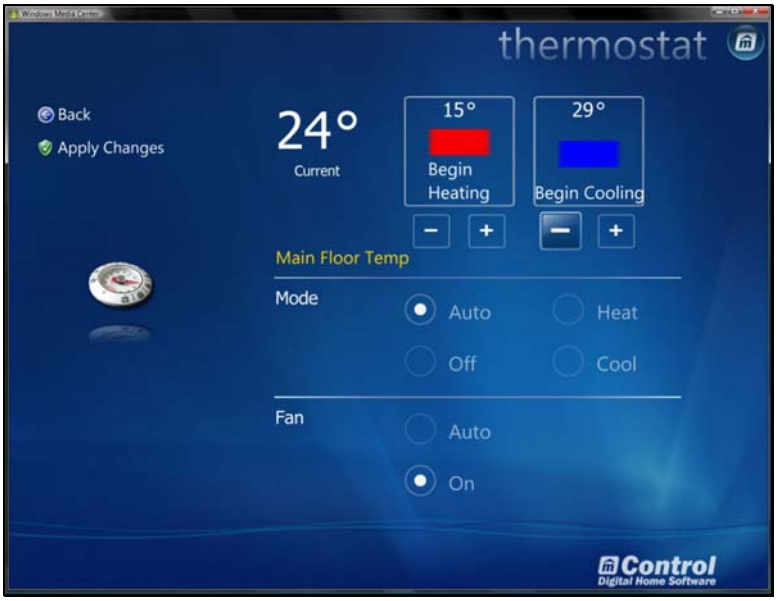
HVAC (Thermostat) Devices

Device Status	Meaning
	Status information from the thermostat including: ▪ Current Temperature ▪ Mode: Auto, Heat, Cool, Off ▪ Fan Mode: Auto, On, Off

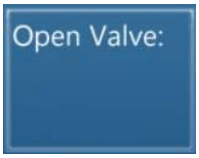
Device Function	Operation	Supported With
	View detailed information related to the thermostat	- All thermostats

HVAC (Thermostat) Detail Screen

The HVAC (Thermostat) detail screen allows adjustment of HVAC (Thermostat) device parameters.



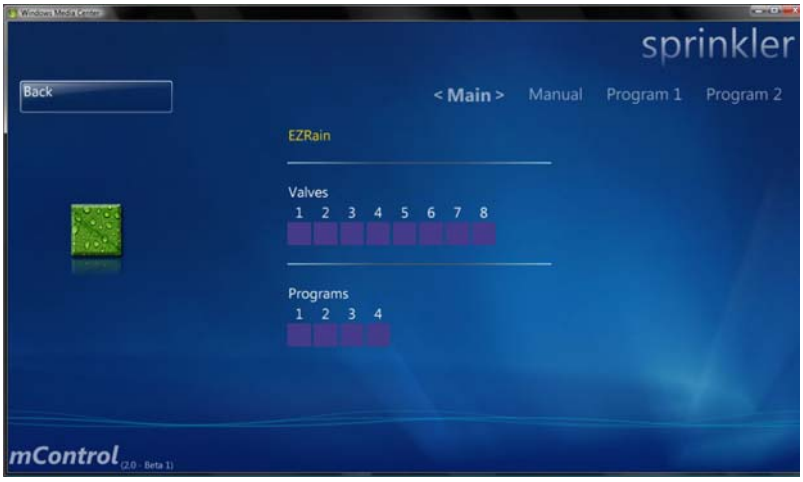
Irrigation Devices

Device Status	Meaning
	Status information from the irrigation system including: ▪ Valve (1 through 8) status ▪ Program (1 through 4) status

Device Function	Operation	Supported With
	View detailed information related to the irrigation system	- All EZRain systems

Irrigation Detail Screen

The Irrigation detail screen allows adjustment of irrigation device parameters.



Security System Devices

Device Status	Meaning
	Status information from the security system including: ▪ Ready status (grey for not ready, green for ready) ▪ Armed status (grey for not armed, red for armed)

Device Function	Operation	Supported With
	View detailed information related to the irrigation system	- All Elk security systems

Security System Detail Screen
The Security System detail screen allows adjustment of security system device parameters.

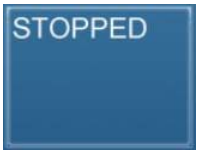
Camera Devices

Device Status	Meaning
	Live video stream from the camera

Device Function	Operation	Supported With
	View detailed information related to the camera	- Axis cameras

Camera Detail Screen
The Camera detail screen allows adjustment of camera device parameters.

Macro Devices

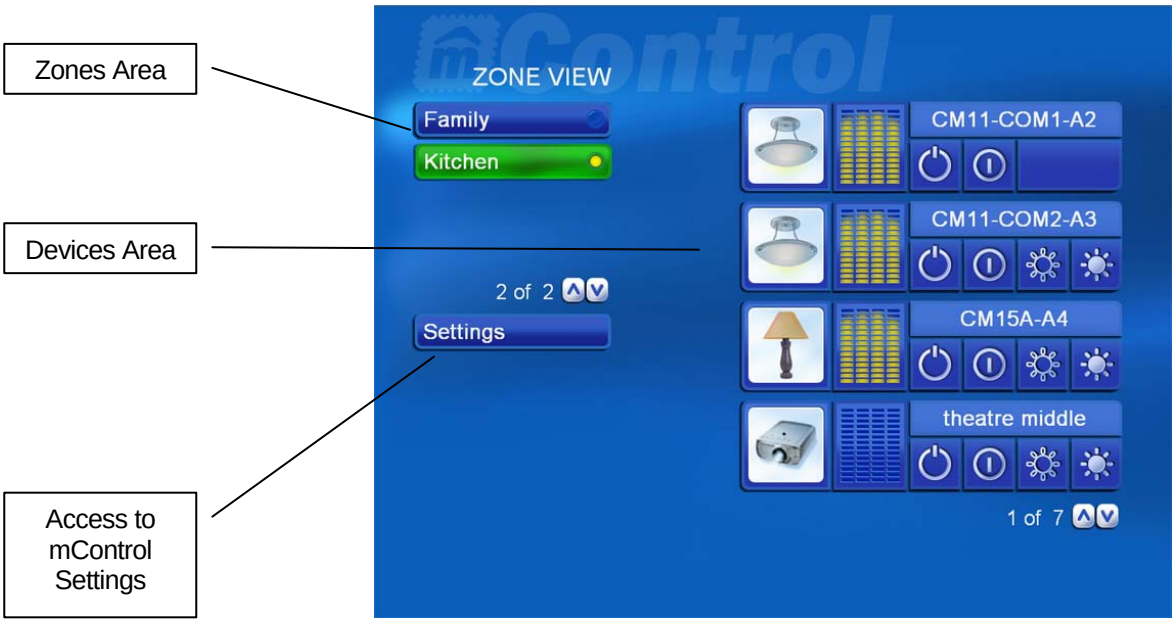
Device Status	Meaning
	Status of the macro: Stopped, Running or Paused.

Function Button	Operation	Supported With
	Execute the macro manually using the Device Function button press as the trigger	Any macro which is enabled to be displayed on the View Zone page.

mControl Client for Internet Explorer and Media Center 2005

Zone View Screen

The Zone View screen, which is considered the “main menu” of mControl, provides a summary of all the defined zones and all devices within a selected zone. From this screen, you can access all of your Zones and Devices.



Zones Area

This area provides a list of all the user-defined Zones. Each Zone can hold 0 or more Devices. Zones naming is very flexible – a zone can represent:

- Actual rooms in house – for example, “Home Theater”
- A functional area of house – for example “Main Floor”
- A generic container name – for example “My Macros”

The “active” zone, or the one currently selected, is denoted by a highlighted yellow radio button. To select a new active room, cursor to it and press OK.

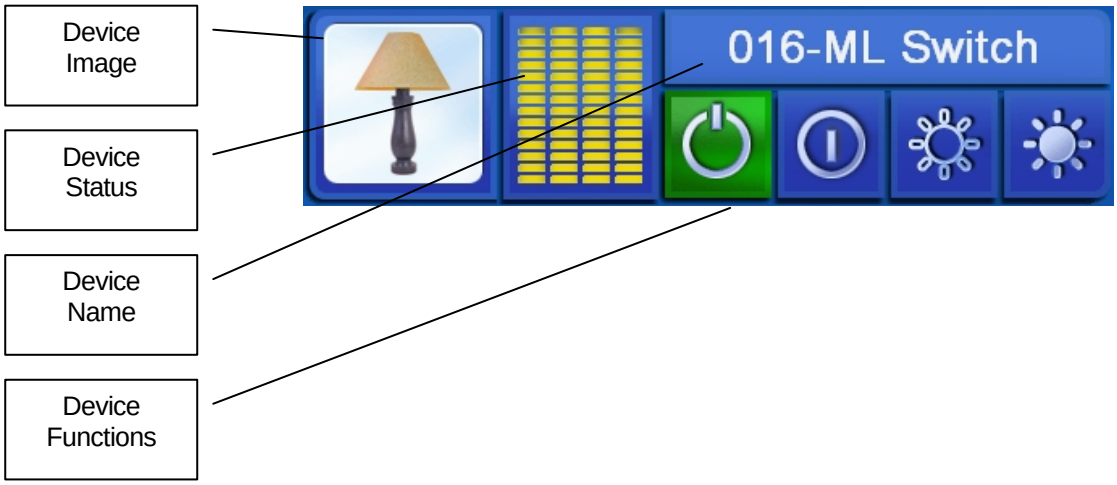
If there are more than 4 zones, it is possible to scroll through them by moving the cursor to the zones area and pressing either UP/DOWN or PAGE UP/PAGE DOWN.

Access to mControl Settings

The “Settings” button provides access to the configuration section of mControl.

Devices Area

This area provides a list of all the devices for the “selected” zone.



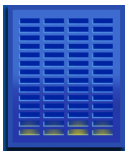
- **Device Image** – An icon or image for the device, as configured by the user
- **Device Status** – Current status of the device and is updated in real-time.
- **Device Name** – The name of the device, as configured by the user
- **Device Functions** – The functions that the device is capable of performing (e.g., ON, OFF, DIM, BRIGHT, SHOW, PLAY, etc.)

If there are more than 4 devices, it is possible to scroll through them by moving the cursor to the devices area and pressing either UP/DOWN or PAGE UP/PAGE DOWN.

Real-time Display of Device Status

Protocol	How is Device Status Changed	Real-time Status	Comments
INSTEON	Device changed by mControl *e.g., button press on screen*	✓	▪ Near instantaneous
	Device changed by remote *e.g., ControLinc changes value of device*	✓	▪ May take 1 second
	Device changed via user manually *e.g., via paddle press on SwitchLinc*	✓	▪ Requires double-linking ▪ May take 1 second
Z-Wave	Device changed by mControl *e.g., button press on screen*	✓	▪ Near instantaneous
	Device changed by remote *e.g., HA07 or HA09 changes value of device*	✓	▪ May take up to 30 seconds, depends on polling setting
	Device changed via user manually *e.g., via paddle press on SwitchLinc*	✓	▪ May take up to 30 seconds, depends on polling setting
X10	Device changed by mControl *e.g., button press on screen*	✓	▪ Near instantaneous
	Device changed by remote *e.g., using HR12A remote*	✓	▪ Near instantaneous for CM15A and W800RF32 adapter ▪ Not supported for other adapters
	Device changed via user manually *e.g., via paddle press on Leviton switch*	✓	▪ Only available for Leviton switches (which support extended X10 commands)

Switches, Lamp and Appliance Devices

Device Status	Meaning
	Device is OFF
	Device is ON at 100% value
	Device is ON at 50% value
	Device is ON at nominally 0% value

Other increments are available, depending on the granularity of dim/bright selected for the device.

Device Function	Operation	Supported With
	Turn ON device	All binary (ON/OFF) and multi-level (dimmer) modules.
	Turn OFF device	
	DIM device 25%	All multi-level (dimmer) modules.
	BRIGHTEN device 25%	

HVAC (Thermometer) Devices

Device Status	Meaning
	Status information from the thermostat including: ▪ Current Temperature ▪ Current Setpoint(s) ▪ Mode: Auto, Heat, Cool, Off ▪ Fan Mode: Auto, On, Off

Device Function	Operation	Supported With
	View detailed information related to the thermostat	- All thermostats

Irrigation Devices

Device Status	Meaning
	Status information from the irrigation system including: ▪ Valve (1 through 8) status ▪ Program (1 through 4) status

Device Function	Operation	Supported With
	View detailed information related to the irrigation system	- All EZRain systems

Security System Devices

Device Status	Meaning
	Status information from the security system including: ▪ Ready status (grey for not ready, green for ready) ▪ Armed status (grey for not armed, red for armed)

Device Function	Operation	Supported With
	View detailed information related to the irrigation system	- All Elk security systems

Camera Devices

Device Status	Meaning
	Live video stream from the camera

Device Function	Operation	Supported With
	View detailed information related to the camera	- D-Link cameras - Axis cameras

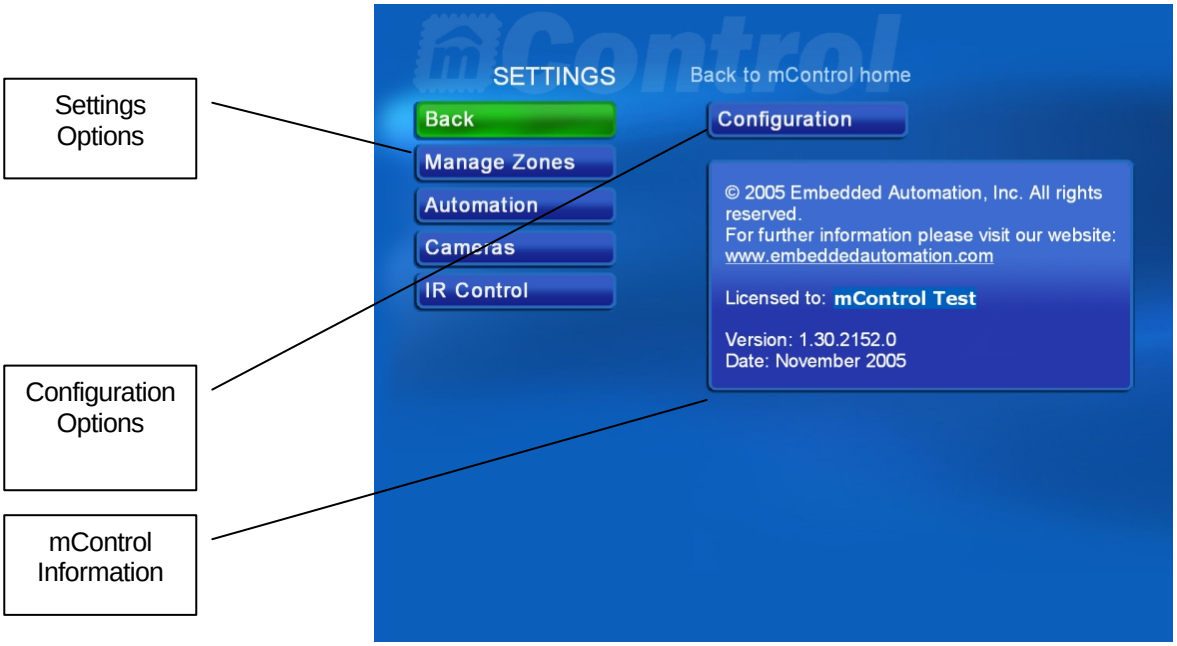
Macro Devices

Device Status	Meaning
	Has no meaning.

Function Button	Operation	Supported With
	Execute the macro manually using the Device Function button press as the trigger	Any macro which is enabled to be displayed on the View Zone page.

Settings Screen

The Settings screen provides information about mControl and access to the various mControl configuration screens.



Settings Options

The Settings Options buttons provide the following functions:

- **Home** – goes back to the Zone View Screen
- **Manage Zones** – allows configuration of the defined zones and associated devices
- **Automation** – allows modification of existing macros or creation of macros
- **Camera** – allows configuration of cameras
- **IR Control** – allows configuration of IR functionality

Configuration Options

Configuration settings like mControl skins and location information (for sunrise/sunset calculations).

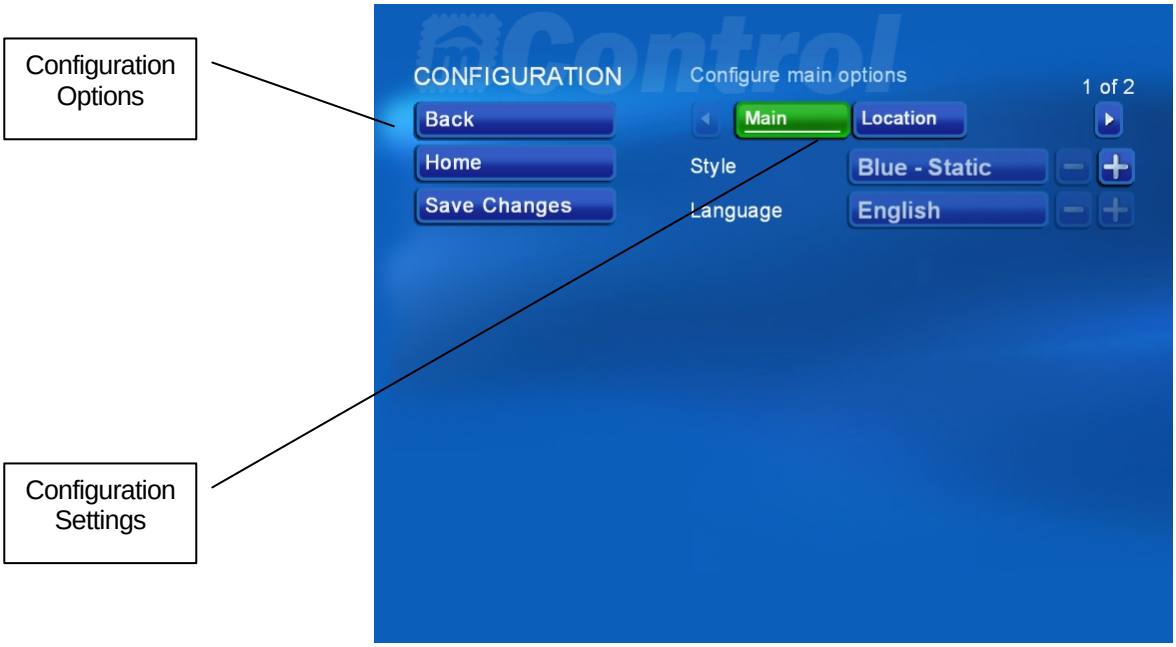
mControl Information

This section provides the following information on mControl:

- mControl copyright and license information
    - If the license is a 30-day trial license, the “Licensed to” field will be “Embedded Automation”
    - If the license has been purchased, but not activated, the “Licensed to” field will be the purchaser’s name, with a parenthetic reference that activation is required
    - If the license has been purchased and activated, the “Licensed to” field will be the purchaser’s name
- mControl version, build number and date of build information

Configuration Screen

The Configuration Screen allows modifying the personal configuration settings of mControl.



Configuration Options

The Configuration Options buttons provide the following functions:

- **Back** – goes back to the Settings Screen
- **Home** – goes back to the Zone View Screen
- **Save Changes** – saves the configuration changes and returns to the Settings screen

Configuration Settings (Main)

This section provides the following configuration options:

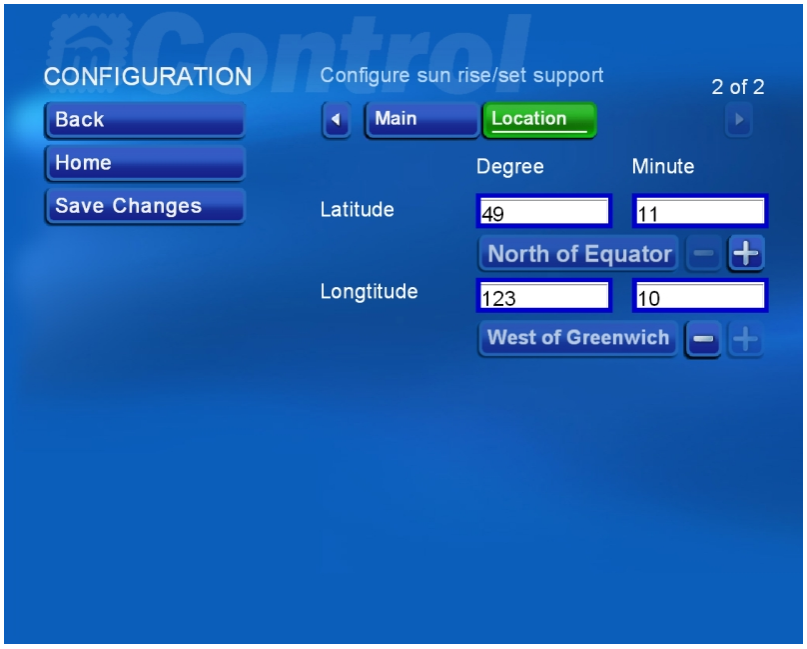
- **Style** – the user interface style (or "skin")

Styles	Comments
Blue – Static	Default style - recommended for Media Center use.
Grey – Static	Grey skin – optimized for Internet Explorer use.
Midnight	Dark grey skin – optimized for Internet Explorer and Ultra Mobile PC use
Blue – Dynamic	Provides animated images based on "Blue" background. If you are using Media Center, please be aware that animated graphics may cause performance issues because of Media Center's native scaling and rendering algorithms.

If the style is changed, please empty Temporary Internet Files in Internet Explorer to ensure removal of the previous style from the cache.

- **Language** – the language used within mControl. Currently only English is supported.

Configuration Settings (Location)



This section allows users to define their location. Location information is used to calculate sunrise and sunset values.

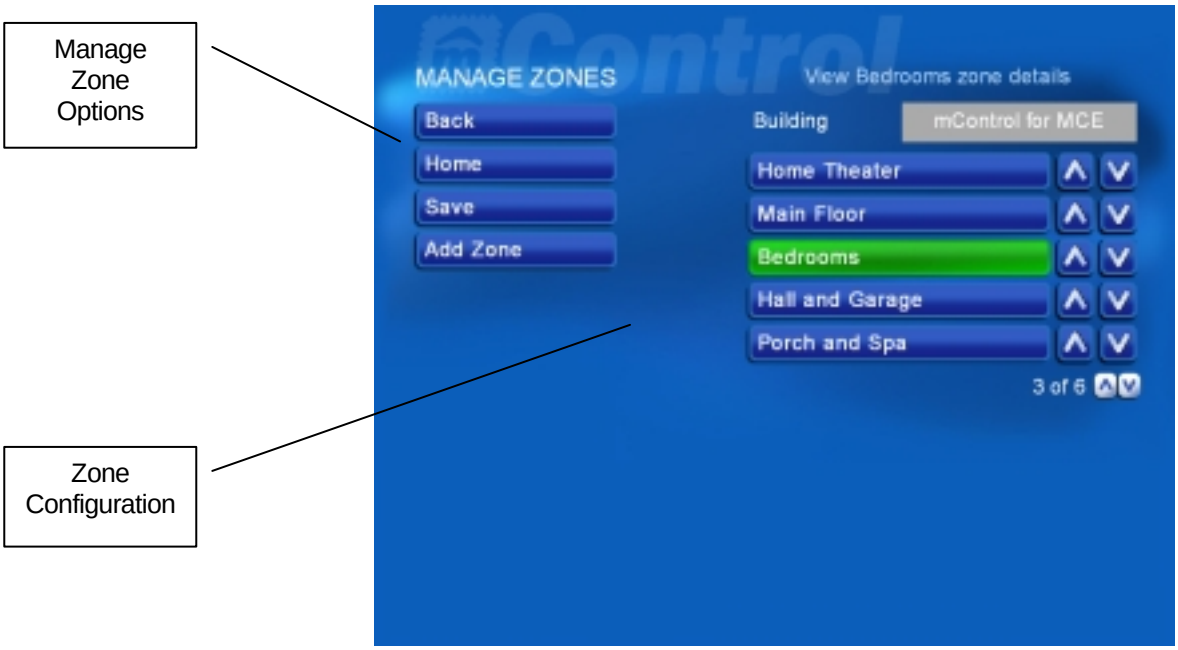
- **Latitude** – in Degrees and Minutes
- **North or South of Equator** – the current location's relative position to the Equator
- **Longitude** – in Degrees and Minutes
- **East or West of Greenwich**– the current location's relative position to Greenwich

To determine the Latitude and Longitude of your location, we recommend: http://www.bcca.org/misc/qiblih/latlong.html.

This information is used to calculate sunrise and sunset times for your location. The sunrise and sunset times can be used as triggers for mControl macros (see section "Macro Configuration – Time").

Manage Zones Screen

The Manage Zones Screen provides a summary of all the defined zones and allows changing the order for display in the Zone View page.



Manage Zone Options

The Manage Zone Options buttons provide the following functions:

- **Back** – goes back to the Settings Screen
- **Home** – goes back to the Zone View Screen
- **Save** – saves the current display order of the zones
- **Add Zone** – create a new zone

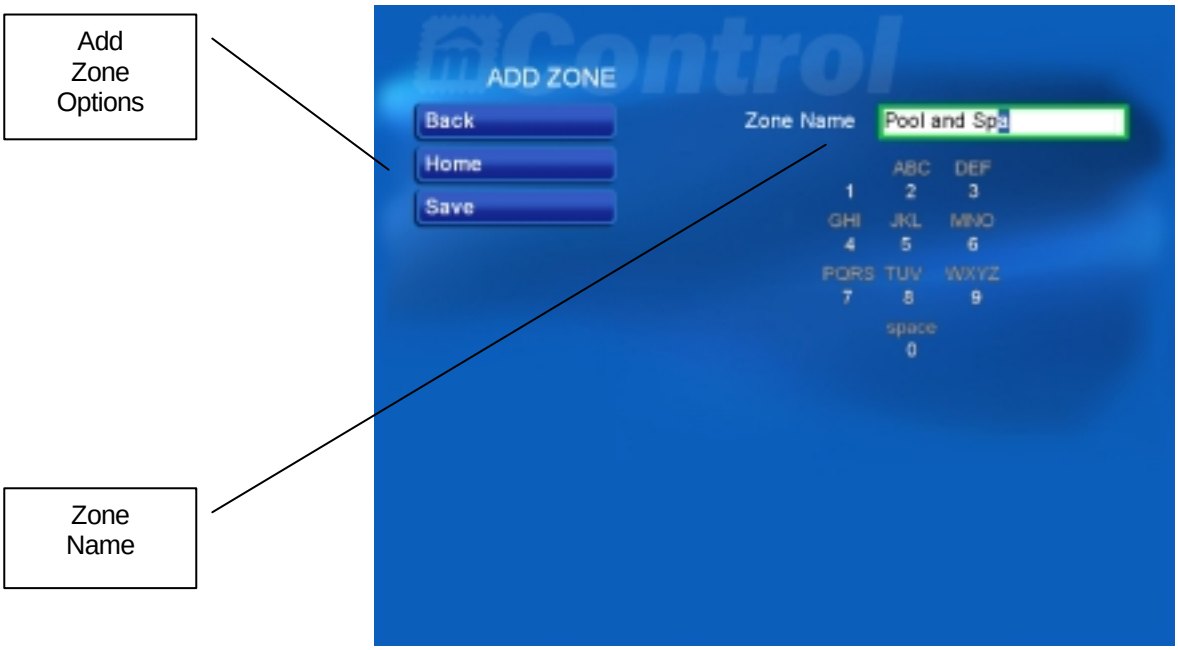
Zone Configuration

This section provides the following options:

- Zone Edit – by cursoring to a zone name and pressing OK, access to the Edit Zone Screen is provided
- Zone Display Order – by pressing on the UP/DOWN buttons, the display order of the zones for the Zone View Screen is modified

Add Zone Screen

The Add Zone Screen allows the creation and naming of a new zone.



Add Zone Options

The Add Zone buttons provide the following functions:

- **Back** – goes back to the Settings Screen
- **Home** – goes back to the Zone View Screen
- **Save** – saves the new zone

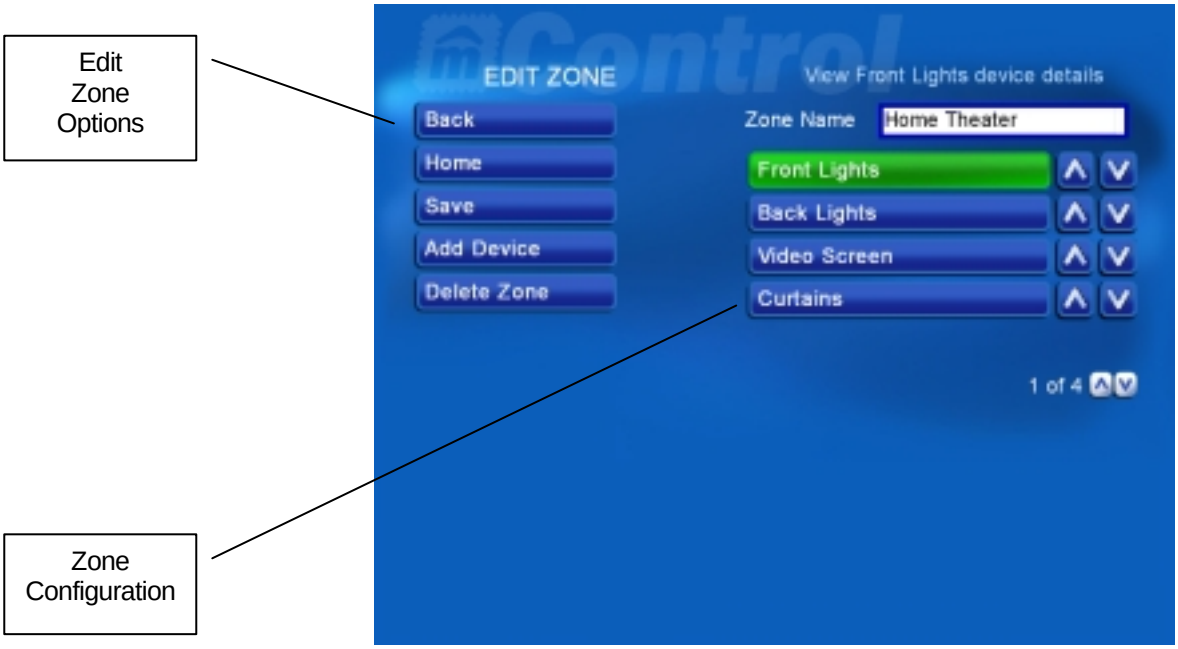
Zone Name

This section provides the following configuration options:

- Name – the name of the Zone (Text entry, up to 16 characters)

Edit Zone Screen

The Edit Zone Screen allows modifying the configuration of an existing zone.



Edit Zone Options

The Edit Zone Options buttons provide the following functions:

- **Back** – goes back to the Manage Zones Screen
- **Home** – goes back to the Zone View Screen
- **Save** – saves the changes for the current zone and returns to the Manage Zones Screen
- **Add Device** – adds a device to the current zone; goes to the Edit Device Screen
- **Delete Zone** – deletes the current zone and returns to the Manage Zones Screen. A Zone can not be deleted if is associated with a Macro or Actions.

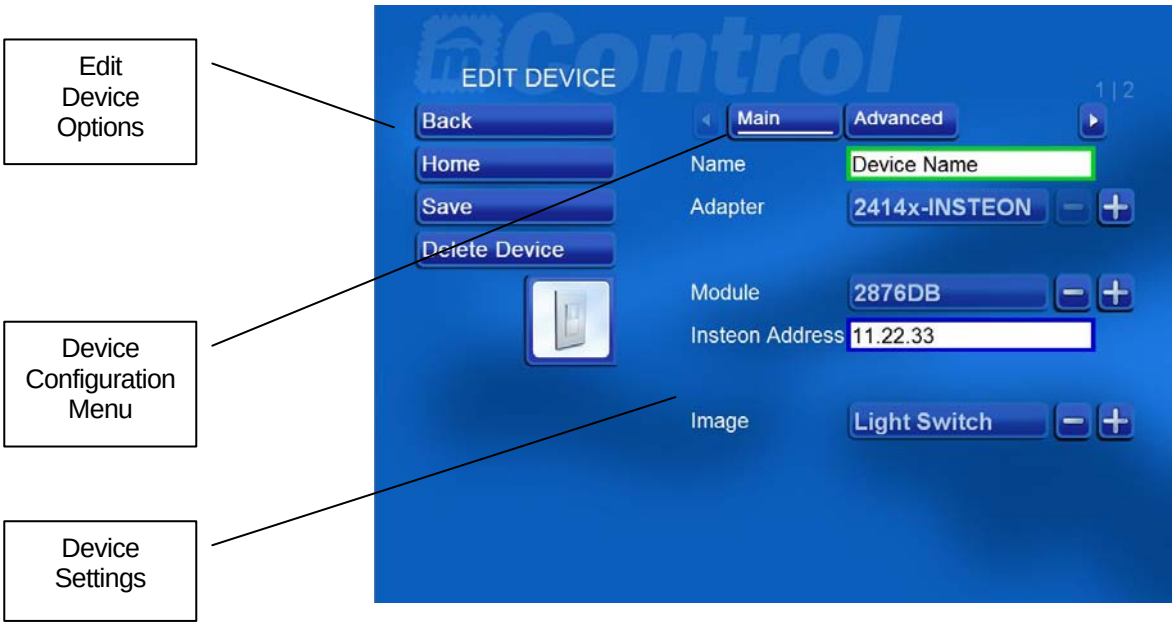
Zone Configuration

This section provides the following configuration options:

- **Name** – the name of the zone (Text entry, up to 16 characters)
- **Device Edit** – by cursoring to a device name and pressing OK, access to the Edit Device Screen is provided
- **Device Display Order** – by pressing on the UP/DOWN buttons, the display order of the devices for the Zone View Screen is modified

Edit Device Screen

The Edit Device Screen allows modifying the configuration of an existing or new device.



Edit Device Options

The Edit Device Options buttons provide the following functions:

- **Back** – goes back to the Edit Zone Screen
- **Home** – goes back to the Zone View Screen
- **Save Changes** – saves the changes for the current device and returns to the Edit Zone Screen
- **Delete Device** – deletes the current device and returns to the Edit Zone Screen. A Device can not be deleted if it is associated with an Action within a Macro.

Device Configuration Menu

Use this menu system to access the various configuration settings for a device:

- **Main** – Define the address, adapter and image for the device
- **Advanced** – Defined additional parameters for the device

Device Settings (Main)

This section provides the following configuration options:

- **Name** – the name of the device (Text entry, up to 16 characters)
- **Adapter** – the adapter used to communicate with this specific device (see table for available adapter)
- **Address** – the address for the device (see table for address methods)
- **Image** – the image associated with the device

Device Settings - Adapters

Adapter	Protocol	Description	Interface	Loaded at Startup?
2414x	INSTEON, X10	INSTEON PowerLinc adapters including 2414S, 2414U, 2814S and 2814U.	USB (default) and COM	Yes
ZWCTRL	ZWAVE	Entire range of Z-Wave compatible adapters – primary or secondary	USB (default) or COM	Yes
CM11A	X10 and Extended X10	X10 adapter – use this for CM12U operation	COM (default)	Yes
CM15A	X10	X10 adapter – use this for CM19A operation	USB (default)	Yes
CM17A	X10	X10 adapter	COM	No
1132x	X10	X10 adapter	USB	No
W800RF	X10	X10 adapter (RF receive only)	COM	No
ELKM1	ELKM1	Elk M1 Security System	COM (default) or IP	No
ADEMCO	VISTA	Honeywell Ademco Vista Security System	COM	No
DSCPS	HAIRC	HAI Omnistat RC-Serial Thermostat	COM	No

To enable (load) adapters, please configure the mServer.exe.XML file, which is located in the C:\Program Files\Embedded Automation\mControl\server directory.

The Edit Device screen will change depending on the type of adapter selected.

Adding INSTEON Devices

For INSTEON devices, you will required to provide an INSTEON address. The INSTEON addresses are in the form of xx.xx.xx, where x is a number in the range of 0-9 and A-F (hex values). To find this address, check on the back of your INSTEON device.

Module	Class	Description	Default Image
EZRAIN	SPRINKLER	EZRain Irrigation System	
2456Dx	MLVLSWITCH	LampLinc 2456Dx	
2456Sx	BINSWITCH	ApplianceLinc 2456Sx	
2476D	MLVLSWITCH	SwitchLinc 2476D	
2476S	BINSWITCH	SwitchLinc 2476S	
2486D	MLVLSWITCH	KeyPadLinc 2486D	
2876DB	MLVLSWITCH	ICON Switch 2876DB	
2876SB	BINSWITCH	ICON Switch 2856SB	
2856DxB	MLVLSWITCH	ICON Lamp 2876DxB	
2856SxB	BINSWITCH	ICON Appliance 2856SxB	

All INSTEON devices added to mControl zones will automatically be added to the PowerLinc 2414x/2814x PLC Database, thereby allowing the PowerLinc to recognize the device during 2-way communications. If the device is deleted from the mControl zone, it will be automatically removed from the PowerLinc's PLC Database. This eliminates the need for the user to do manual linking and unlinking.

Adding Z-Wave Devices

If the Z-Wave device has already been registered within your Z-Wave network, you can use the spinner bar to select the Z-Wave device – an ID and description is provided for each enrolled device.

If the Z-Wave device has not been entered into your local Z-Wave network, you will have register the device into your Z-Wave network by using the Enroll (and/or Unenroll) button(s).

- **Enroll** – If you have selected a Z-Wave adapter and it is a primary controller, you can enroll a new device in to the Z-Wave network. If your adapter is defined as a secondary controller – this button will be unavailable.

Z-Wave devices may not be able to be enrolled if there were previously associated with another network. In this scenario, you may try to un-enroll the device and then enroll.

- **Un-enroll** – If you have selected a Z-Wave adapter and it is a primary controller, you can un-enroll a device from the Z-Wave network. If your adapter is defined as a secondary controller – this button will be unavailable.

- **Abort** – Use Abort to stop any Enroll or Un-enroll in progress. If your adapter is defined as a secondary controller – this button will be unavailable.

Module	Group	Description	Default Image
ZWTHERMO	THERMOSTAT	Z-Wave Thermostat	
ZWBINSW	BINSWITCH	ZWave Switch	
ZWMLSW	MLVLSWITCH	ZWave Dimmable SW	
ZWSHADES	SHADES	ZWave Shades	
ZWSENSOR	SENSOR	ZWave Sensor	

Z-Wave modules are tied to the Z-Wave ID, hence this is a display only field, not editable.

Adding X10 Devices

For X10 devices, you will required to provide an X10 address. X10 addresses are in the form a House value and Unit number.

- **House** – If you have selected an X10 module, you will be required to provide an X10 House Address (Spinner entry, Valid Settings: A through P)
- **Unit** – If you have selected an X10 module, you will be required to provide an X10 Unit Address (Spinner entry, Valid Settings: 1 through 16)

Module	Group	Description	Default Image
AM466	BINSWITCH	Appliance Module (3-pin)	
LM14A	MLVLSWITCH	2-Way Lamp Module - Dimmable	
LM15A	BINSWITCH	Screw-In Mini Lamp Module	
LM465A	MLVLSWITCH	Lamp Module - Dimmable	
PAM21	BINSWITCH	PRO 2-Way 2 Pin Appliance Module	
SC546A	BINSWITCH	Remote Controlled Chime	
SR227	BINSWITCH	SuperSocket Receptacle Module	
WS467	MLVLSWITCH	Wall Switch Module - Dimmable	
MS16A	SENSOR	Motion Sensor Model	
UM506	RELAY	Universal Module Relay	
HCP03	MLVLSWITCH (Extended X10)	Leviton Lamp Module – Dimmable	
HCM10	MLVLSWITCH (Extended X10)	Leviton Switch – Dimmable	

If you do not see the X10 device you want to control on this list, you can try to choose a X10 device that most closely resembles your device. For example, if the device you are using is an "appliance" type of device, you may try to control it by setting the device to be an "AM466" device. For additional assistance, please email support@embeddedautomation.com

Adding Security System Devices

For Security System devices, you will be required to provide an area.

Module	Group	Description	Default Image
ELKM1	ALARMSYS	ELK-M1 Alarm System Module	
DSCPS	ALARMSYS	DSC PowerSeries Alarm System Module	
VISTA	ALARMSYS	Ademco Vista Alarm Module	

Adding Thermostat Devices

Depending on the thermostat device, different parameters are required to define the device.

Module	Group	Description	Default Image
TXB16	THERMOSTAT	RCS/HVAC X10 Thermostat Kit ***Requires X10 House Address***	
ZWTHERMO	THERMOSTAT	RCS/HVAC ZWave Thermostat Kit ***Requires Enrolled Z-Wave Device***	
HAIRCTHERMO	THERMOSTAT	HAI Omnistat RC-Serial Thermostat ***Requires RC Address (0-127)***	

Device Settings (Advanced)

This section provides the following configuration options:

- **Dim/Bright By** – Defines the granularity of each Dim/Bright command. For example, if you set this to 10%, the brightness levels available will be 10%, 20%, 30%, etc. Of course, this is dependent on each device's capability.

- **Preset On** – Defines the "Preset On" value for the device. That is, upon an ON command, what value the device will go on to.

- **Ramp Rate** – Defines how fast the light turns ON or OFF.

	INSTEON	Z-Wave	X10
Dim/Bright By	Supported	Supported	Supported for *Extended X10*
Preset ON	Supported for: 2876DB SwitchLinc, 2476D SwitchLinc, 2476D SwitchLinc, 2486D KeypadLinc, 2456D3 LampLinc	Supported for multi-level switches only	Not supported
Ramp Rate	Supported	Not supported	Not supported

Advanced INSTEON Settings

For INSTEON devices, you must cycle power after saving the device in mControl for Preset Dim and Ramp Rates to take effect. To cycle power:

- Remove power for 3-5 seconds (until LED light goes off), wait another 3 seconds and then return power.
- Pull up on SET button for 3-5 seconds (until LED light goes off), wait another 3 seconds and then push SET button to normal position (do not depress).Be careful *NOT* to push down the SET button after this process as it will factory reset the device and lose all changes.

If the Preset On and Ramp Rate is changed manually, it is recommended that mControl be restarted to ensure that changed values are re-read into mControl's database.

mControl Value for "Ramp Rate"	Corresponding LED Value if done manually
0.1 sec	Top LED
0.2 sec	7th LED
0.3 sec	6th LED
0.5 sec	5th LED
2.0 sec	4th LED
4.5 sec	3rd LED
6.5 sec	2nd LED
8.5 sec	1st LED

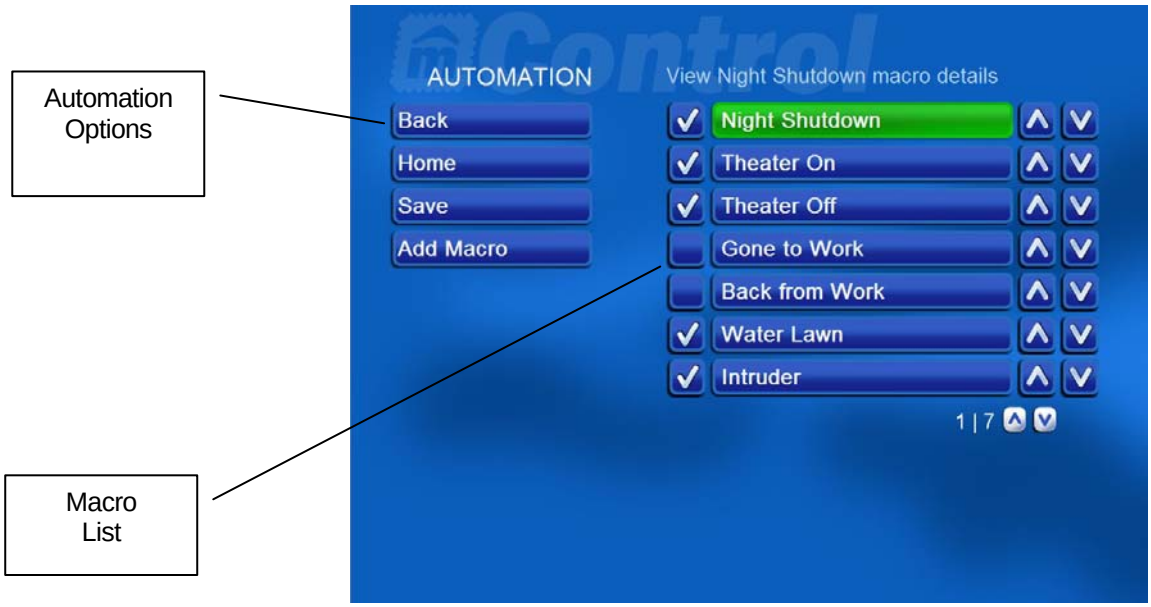
mControl Value for "Preset On"	Corresponding LED Value if done manually
100%	Top LED
99%	Top LED
88%	7th LED
75%	6th LED
62%	5th LED
50%	4th LED
37%	3rd LED
25%	2nd LED
13%	1st LED

Advanced Z-Wave Settings

If the Preset On is changed manually, it is recommended that mControl be restarted to ensure that changed values are re-read into mControl's database.

Automation Screen

The Automation Screen allows modifying the configuration of existing or new macros.



Automation Options

The Automation Options buttons provide the following functions:

- **Back** – goes back to the Settings Screen
- **Home** – goes back to the Zone View Screen
- **Save** – save the changes in the Macro ordering and return to Settings Screen
- **Add Macro** – allows a creation of a new macro on the Add a Macro page

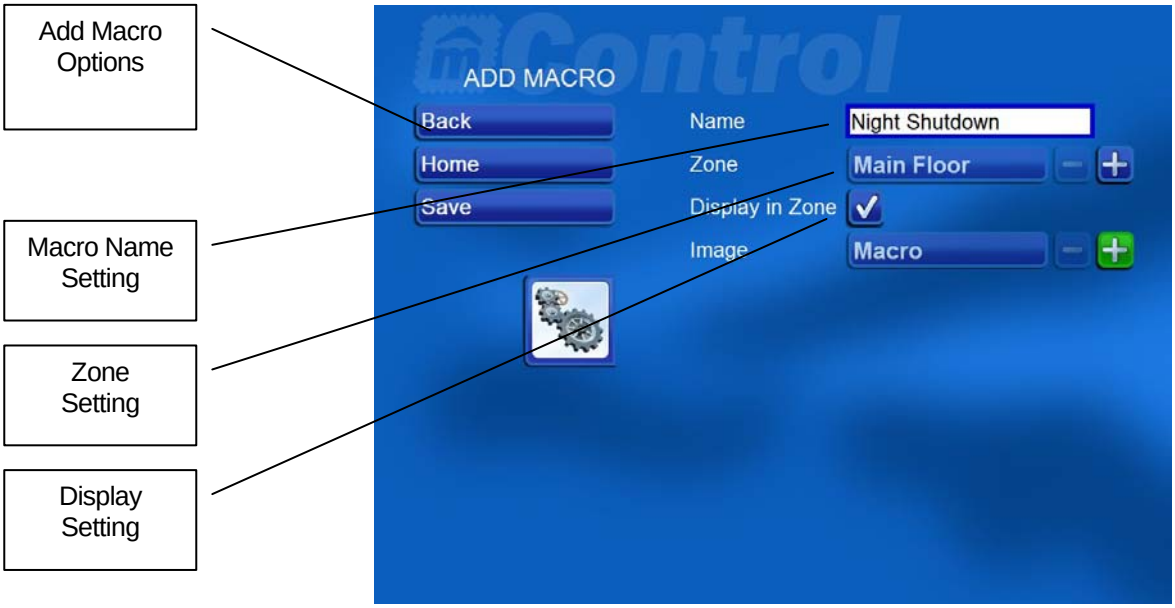
Macro List

This section provides the following configuration options:

- **Macro Enable** – by pressing on this checkbox, the Macro is enabled (with checkmark) or disabled (without checkmark)
- **Macro Edit** – by cursoring to a macro name and pressing OK, access to the Edit Actions Screen is provided
- **Macro Display Order** – by pressing on the UP/DOWN buttons, the display order of the devices for the Macros modified

Add Macro Screen

The Add Macro Screen allows for the creation of a new macro.



Add Macro Options

The Add Macro Options buttons provide the following functions:

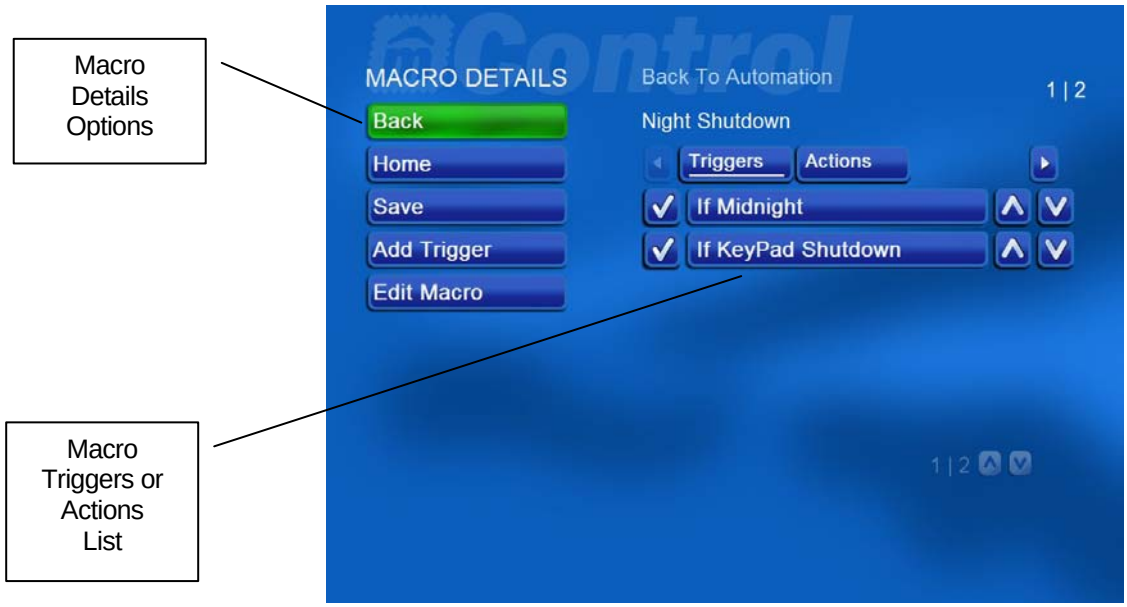
- **Back** – goes back to the Automation Screen
- **Home** – goes back to the Zone View Screen
- **Save** – saves the changes for the current macro and returns to the Automation Screen

This section allows the configuration of the new macro, including:

- **Name** – the name of the macro (Text entry, up to 16 characters)
- **Zone** – the zone in which the macro will show up in the Zone View screen
- **Display in Zone** – enable display of the macro in the selected zone. If this is not enabled, the macro is not displayed in the zone. *The macro will still operate even if it is not displayed within the zone.*
- **Image** – this is the image that is associated with the macro.

Macro Details Screen

Once a macro has been created, use the Macro Detail screen to define its operation by setting the events or triggers which initiate the macro and setting a list of actions which take place once the macro has been initiated.



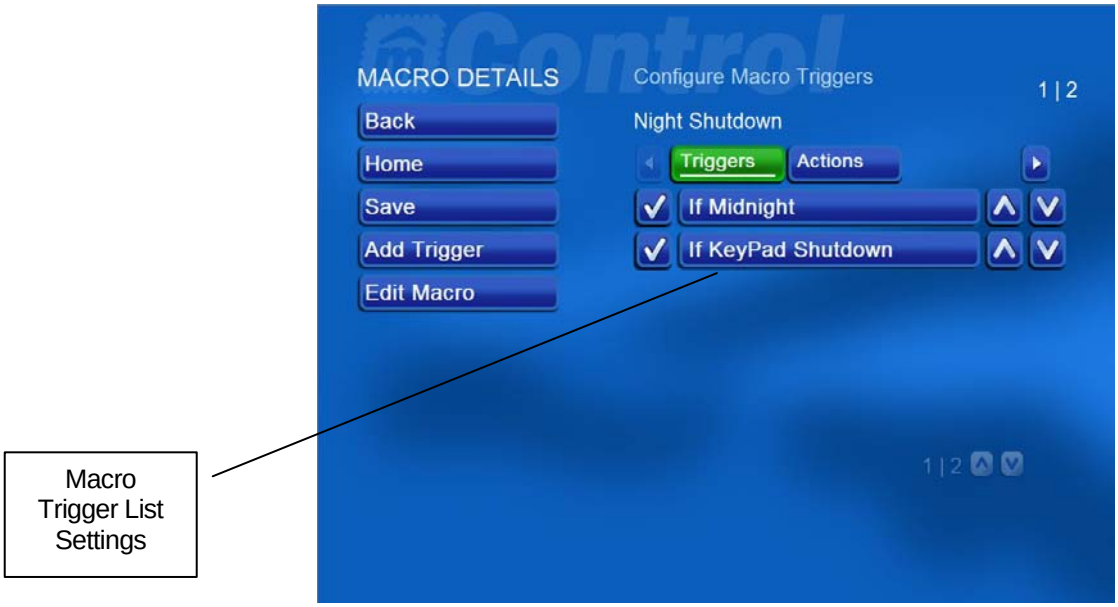
Macro Details Options

The Macro Details Options buttons provide the following functions:

- **Back** – goes back to the Automation Screen
- **Home** – goes back to the Zone View Screen
- **Save** – saves the changes for the current macro and returns to the Automation Screen
- **Add Trigger** or **Add Action** – allows entry of triggers and actions for the macro. This button changes based on the selection of the Macro Triggers or Macro Actions lists.
- **Edit Macro** – goes to the Macro Edit Screen which allow changing information related to the macro

Macro Triggers List

Select the Macro Triggers List to add, enable and change triggers for the macro.



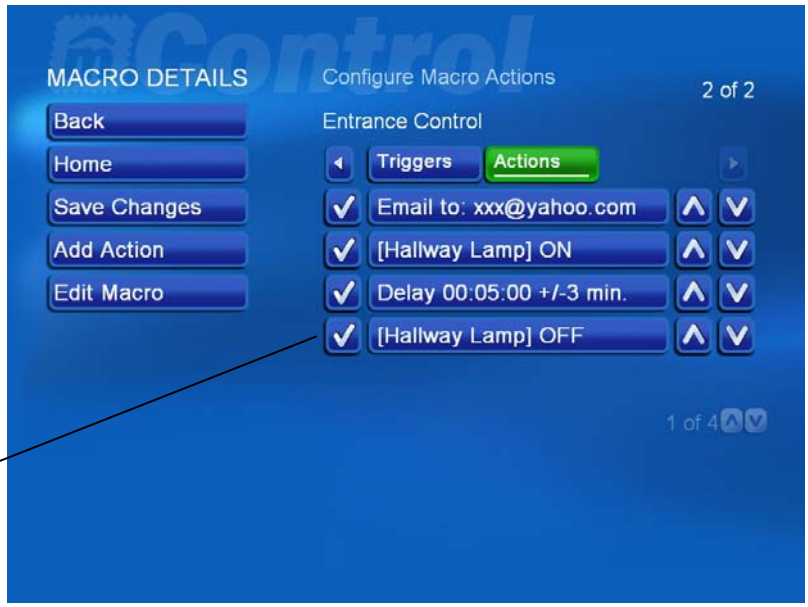
The Macro Trigger List Settings provide the following functions:

- **Enable/Disable** – by checking (enabling) or un-checking (disabling) the trigger, will determine if this trigger is considered
- **Trigger Edit** – by cursoring to a trigger name and pressing OK, access to the Edit Trigger Screen to change or delete the trigger's conditions.
- **Trigger Order** – by pressing on the UP/DOWN buttons, the order of the trigger

Please note, changing the trigger order has no effect on the "priority" of the trigger. Every trigger has equal priority. This option is provided only to allow organization of which triggers are displayed.

Macro Actions List

Select the Macro Actions List to add, enable and change actions associated with the macro.



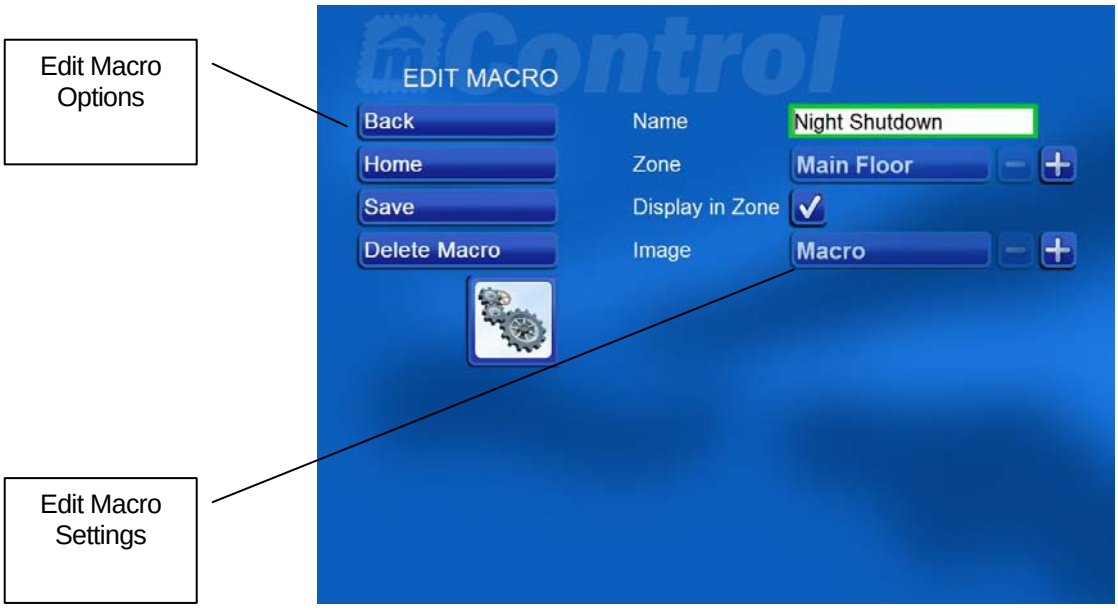
The Macro Actions Settings provide the following functions:

- **Enable/Disable** – by checking (enabling) or un-checking (disabling) the action, will determine if this action is executed.
- **Action Edit** – by cursoring to a trigger name and pressing OK, access to the Edit Action Screen to change or delete the action.
- **Action Order** – by pressing on the UP/DOWN buttons, the order of the execution order of the trigger is modified.

Please note, actions are executed in the order set in the list.

Edit Macro Screen

Select the Edit Macro Screen to change macro settings or delete the macro.



The Edit Macro Options buttons provide the following functions:

- **Back** – goes back to the Automation Screen
- **Home** – goes back to the Zone View Screen
- **Save** – saves the changes for the current macro and returns to the Automation Screen
- **Delete Macro** – deletes the macro

The Edit Macro Settings provide the following functions:

- **Name** – the name of the macro (Text entry, up to 16 characters)
- **Zone** – the zone in which the macro will show up in the Zone View screen
- **Display in Zone** – enable display of the macro in the selected zone. If this is not enabled, the macro is not displayed in the zone. *The macro will still operate even if it is not displayed within the zone.*
- **Image** – this is the image that is associated with the macro.

Macro Triggers

Macros can be initiated by one or more triggers. As soon as one or more of the triggers becomes active, the macro's actions will be executed.

Further, each Macro Trigger contains one or more conditions. Each condition must be true before the overall trigger becomes true.

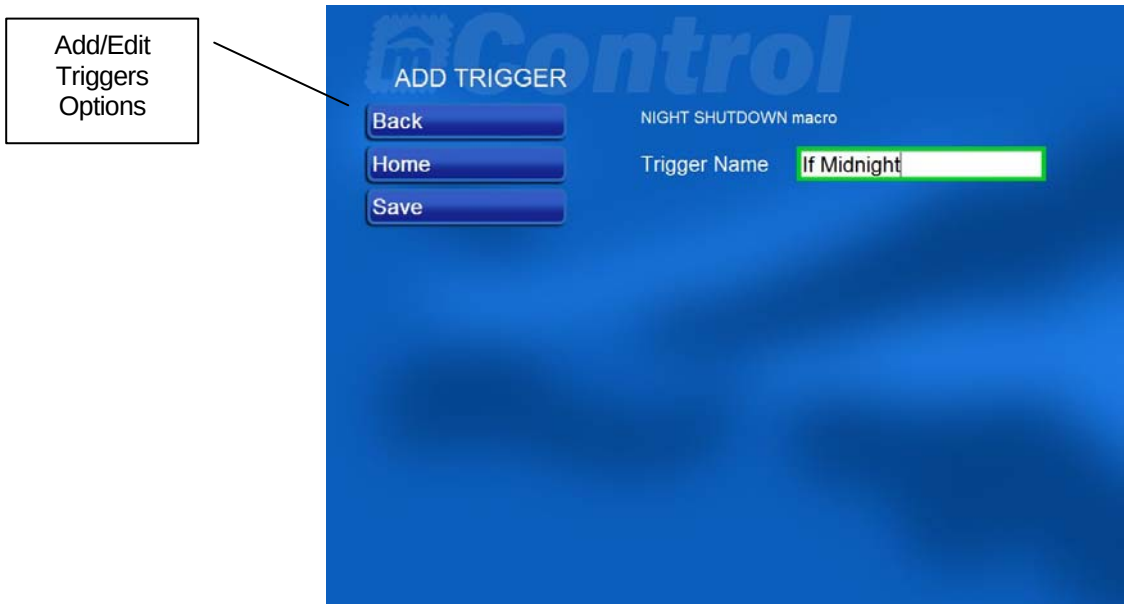
The following conditions are available to trigger a macro:

Condition Type	When the Condition becomes TRUE
Device Change	Momentarily when the device's status changes to the desired value.
Device Status	During the entire time the device's status is at a specified value.
IR Event	Momentarily upon receipt of a previously learned IR message.
MCE Event	Momentarily upon receipt of a Media Center event (e.g., DVD play).
Time Range	During the entire time within the time range specified. Optionally, it is possible to set the days of the week that this condition is valid for.
Recurring Timer	Momentarily, at recurring intervals, for a set number of times, starting at the specified time. Optionally, it is possible to set the days of the week that this condition is valid for.
One Time	Momentarily on a set date and time.
Time of Day	Momentarily at a set time. Optionally, it is possible to set the days of the week that this condition is valid for.
Sunrise	Momentarily at sunrise, plus or minus a time offset. Optionally, it is possible to set the days of the week that this condition is valid for.
Sunset	Momentarily at sunset, plus or minus a time offset. Optionally, it is possible to set the days of the week that this condition is valid for.

Unlike other conditions, the Device Status and Time Range conditions are NOT momentary. They will be true for the entire time the Device Status meets the condition set or Time Range is within the condition set.

Add Triggers Screen

Select the Add Triggers Screen to add a trigger to the macro.

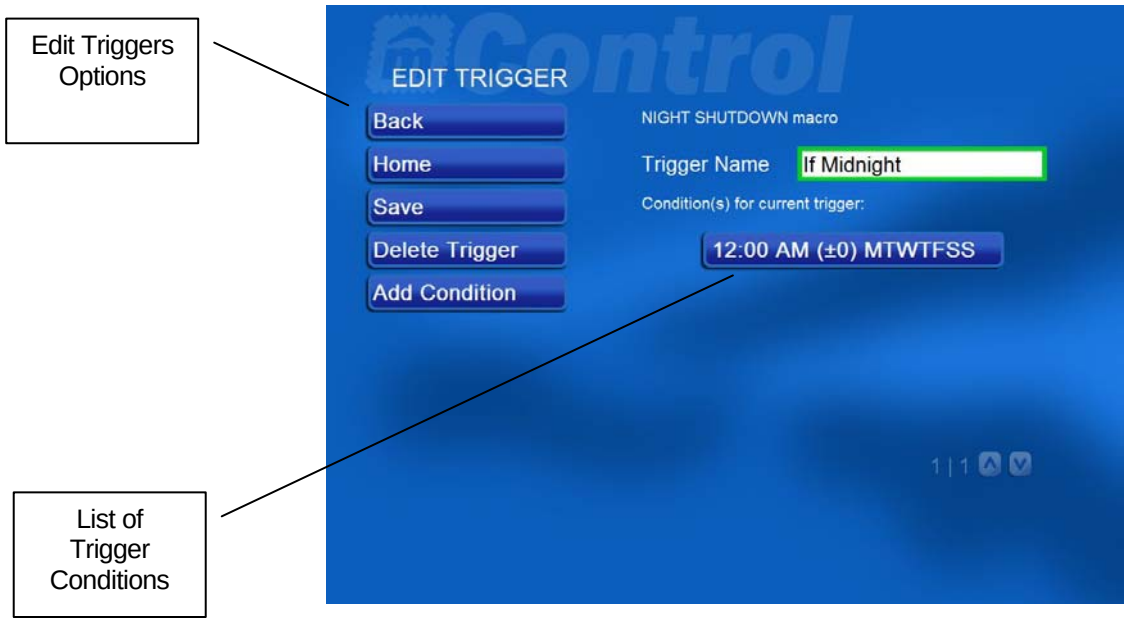


The Add Triggers Options buttons provide the following functions:

- **Back** – goes back to the Macro Details Screen
- **Home** – goes back to the Zone View Screen
- **Save** – saves the changes for the current trigger and returns to the Macro Details Screen

Edit Triggers Screen

Select the Edit Triggers Screen to add conditions to a macro trigger.



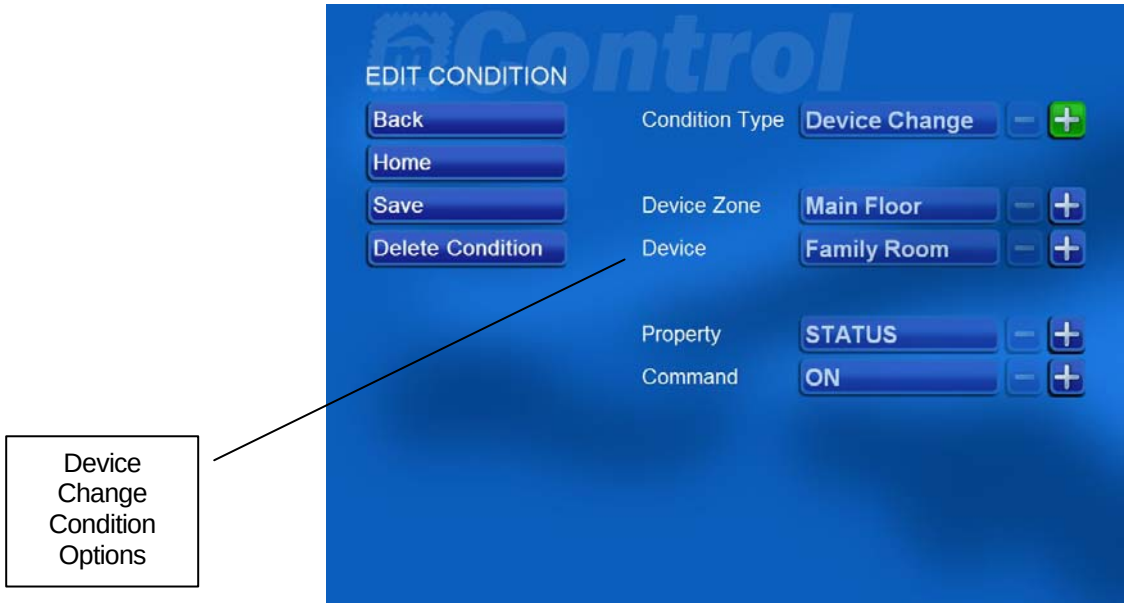
The Edit Triggers Options buttons provide the following functions:

- **Back** – goes back to the Macro Details Screen
- **Home** – goes back to the Zone View Screen
- **Save** – saves the changes for the current trigger and returns to the Macro Details Screen
- **Delete Trigger** – deletes the entire trigger and associated conditions
- **Add Condition** – adds a condition to this trigger

Device Change Condition

Use Device Change conditions to activate a macro based on a device change. Typical scenarios include:

- Activate a macro based on a motion detection
- Activate a macro based on an INSTEON or Z-Wave paddle press



The Device Change Condition options provide the following functions:

- **Device Zone** – the zone the triggering device is located within
- **Device** – the device which will be used for the trigger
- **Property** – the type of value to use as the device change condition
- **Command** – the value of the device change propery

The following table descibes the available settings for device actions:

Device Type	Property	Command
Binary Switch, Multi-level Switch	STATUS	**ON**: Condition becomes true when device changes from Off to On. *Previous device status = Off (-1 or 0)→ Subsequent device status =n, (where n>0)* **OFF**: Condition becomes true when device changes On (any value) to Off. *Previous device status = n, (where n>0) → Subsequent device status = Off (-1 or 0)*
INSTEON Devices	GROUP	The group field can be used to trigger device macros for multi-buttoned INSTEON devices such as KeyPadLincs and ControLincs. Select the group based on the position of the button on the device. **ON**: Incoming group ON command **OFF**: Incoming group OFF command
Security	ARMING	DISARMED, ARMED, ARMED AWAY, ARMED STAY
Security	ALARM	NONE, BURGLAR, OTHER
Camera	MOTION	START, STOP

Device Change conditions can happen as a result of:

- Internal mControl device changes
    - Manual button presses
    - Macro actions.
- External device changes as a result of another device or remote
    - Slave linked device changes (INSTEON)
    - Remote control operation (INSTEON, Z-Wave and X10)
- External device changes as a result of paddle presses and manual button presses
    - Button presses on Z-Wave devices
    - Paddle presses on INSTEON and Z-Wave switches

*Please note, for "On" Device Change conditions, be aware that going to full On (100%) is *NOT* necessary to trigger a macro. Preset On or other non-Off values are suffcient to trigger an "On" Device Trigger.*

Device Change conditions are based on when mControl receives the incoming trigger signal.

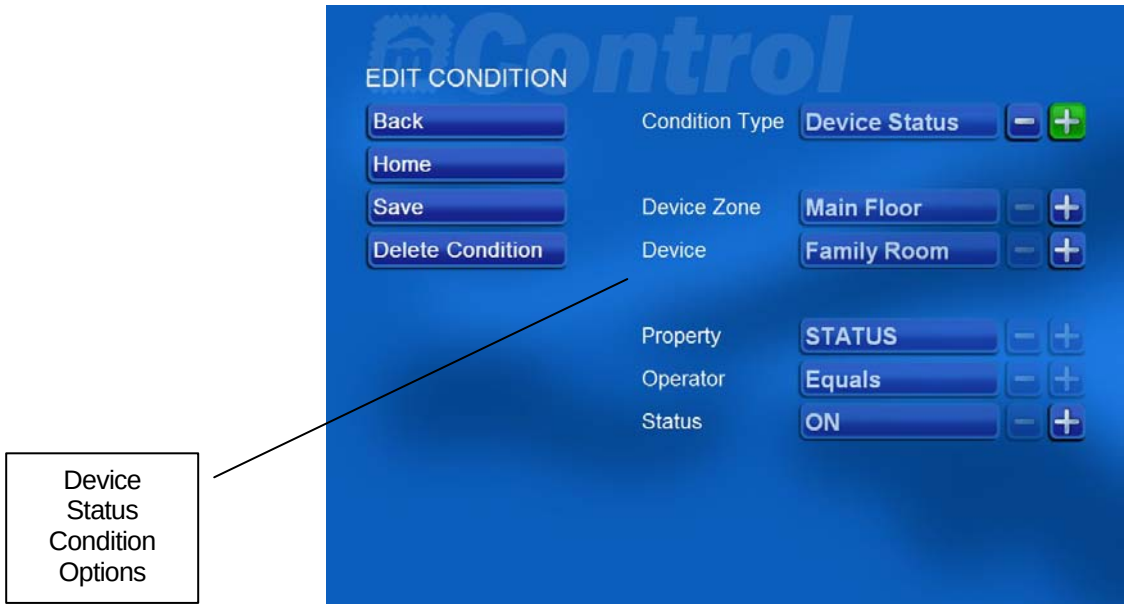
- *For X10 and INSTEON, there may be a small delay (up to 1 second) for an INSTEON message to travel over the powerline, in to the adapter and be recognized by mControl.*
- *For Z-Wave, the delay is dependent upon the pre-defined polling rate. For example, if the polling rate is 10 seconds, expect a worst case delay of 10 seconds.*

Device Change conditions may be affected (i.e., missed) because of busy network activity and/or amount of messages being handled by the adapter.

- *For INSTEON, overlapping messages in/out of the adapter may restrict incoming device changes.*
- *For Z-Wave, busy network activity may result in lost device changes, due to failed polling attempts.*

Device Status Condition

Use Device Status conditions to activate a macro based on a device status.



The Device Status Condition options provide the following functions:

- **Device Zone** – the zone the triggering device is located within
- **Device** – the device which will be used for the trigger
- **Property** – the device property to consider for the condition
- **Operator** – the operator to use in the condition
- **Status** – the status value to use in the condition

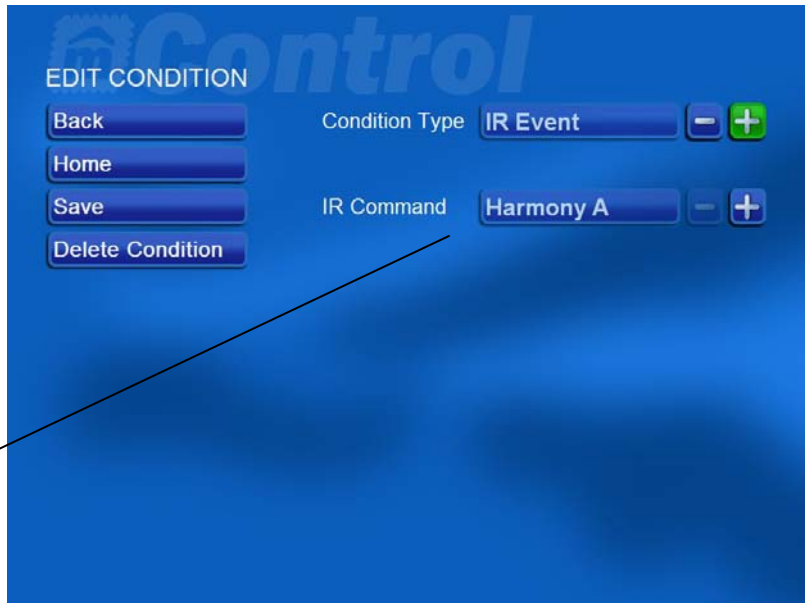
The following table descibes the available settings for device status conditions:

Device Type	Property	Operators	Values
Binary Switch, Multi-level Switch, Relay	STATUS	EQ	ON, OFF
Security	ARMING	EQ, NE	DISARMED, ARMED, ARMED AWAY, ARMED STAY
Security	ALARM	EQ, NE	NONE, BURGLAR, OTHER
Thermostat	SYSMODE	EQ, NE	AUTO|HEAT|COOL|OFF
Thermostat	FANMODE	EQ	AUTO, ON
Thermostat	TEMPSCALE	EQ	F, C
Camera	MOTION	EQ	START, STOP

IR Event Condition

Use IR Event conditions to launch macro based on recognition of a previously learned IR command. Typical scenarios include:

- Launching a macro based on button press on a remote control



The IR Event options provide the following functions:

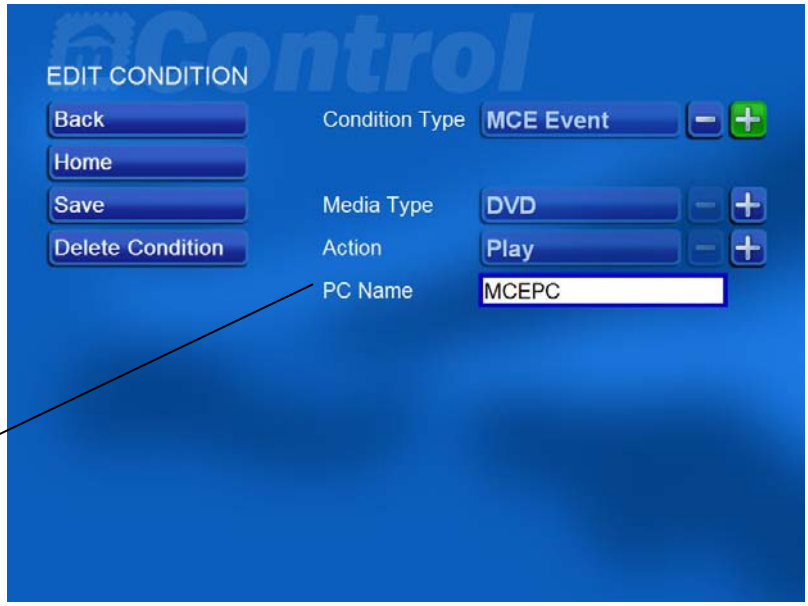
- **IR Command** – the IR command to use as a trigger once received.

To trigger using an IR Event, the IR command must first have been learned through the IR Control section of mControl.

MCE Event Condition

Use MCE Event conditions to activate macros based on Windows XP Media Center Edition 2005 events changes. Typical scenarios include:

- Launching a macro to dim lights based on the DVD Play button press
- Launching a macro to brighten lights based on muting audio



MCE Event Condition Options

The MCE Event condition fields provide the following functions:

- **Type** – the type of media center functionality which will be used for the trigger
- **Action** – the specific action to be used for the trigger
- **PC Name** – the workstation from which the type/action event is comes from. By leaving this empty, events from all PCs are considered.

The following MCE event options exist:

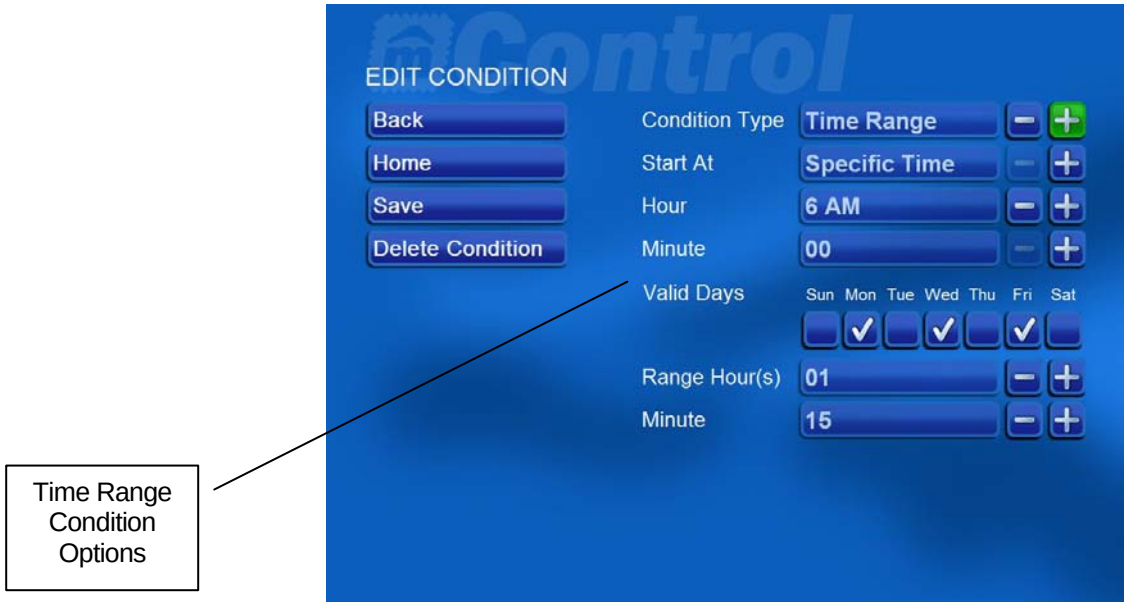
MCE Event Options	Available Options
Type	• DVD • CD • Recorded TV • Audio • Video • Live TV
Action	• Play • Pause • Stop

MCE Events require the “MCE Add-in” to be installed on one or more Windows XP Media Center Edition computers from which Media Center events will originate.

Time Range Condition

Use Time Range conditions to control the time range during which a macro can execute. Typical scenarios include:

- Only allow a trigger to operate during 6:00PM and 12:00PM.



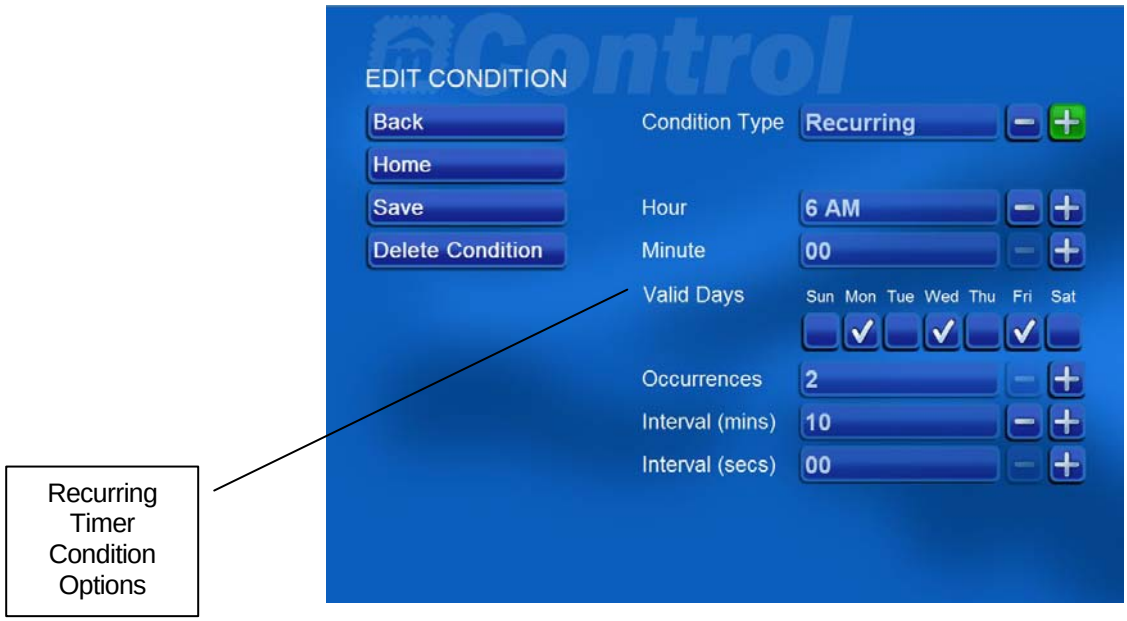
The Time of Day Trigger fields provide the following functions:

- **Start At** – what to use as the start event. Specific time, sunrise or sunset are allowed options.
- **Hour/Minute** – if Specific Time is selected, select the hour and minute for the start time
- **Offset** – if Sunrise or Sunset are selected, select an time offset (in minutes)
- **Valid days** – the days of the week on which the condition is valid
- **Range Hour(s)** – the number of hours to use in the time range
- **Minute(s)** – the number of minutes to use in the time range

Recurring Timer Condition

Use Recurring Timer conditions to run activate triggers multiple times, starting at a given time. Typical scenarios include:

- Starting at 6:00am, activate a trigger every 2 minutes for 10 times.



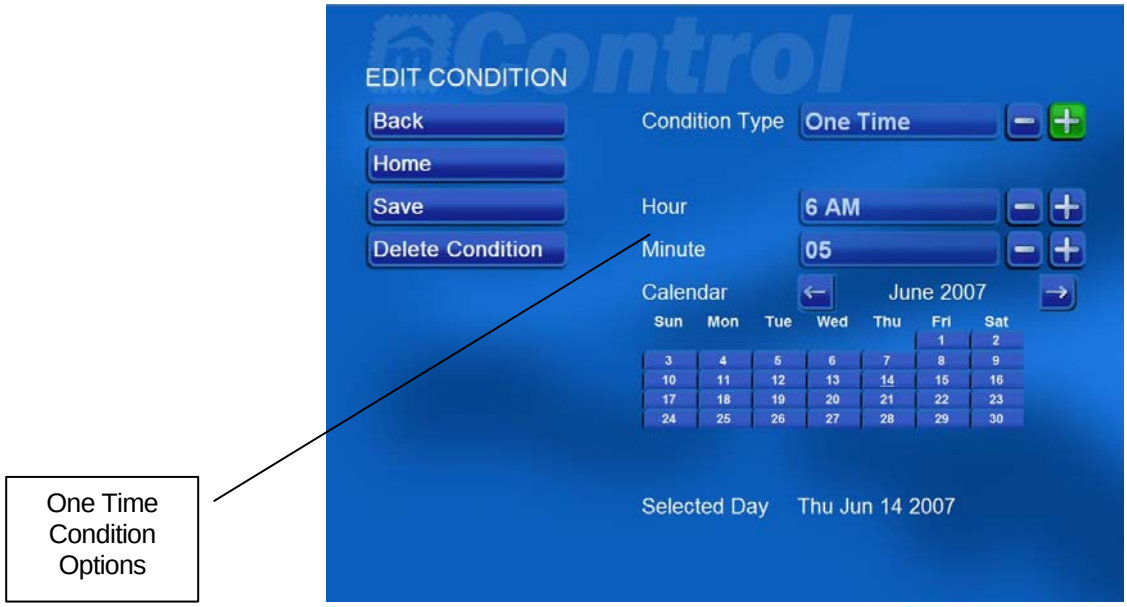
The Recurring Timer condition fields provide the following functions:

- **Hour** – the hour when the recurring timer should start
- **Minute** – the minute when the recurring timer should start
- **Valid days** – the days of the week on which the condition is valid
- **Occurrences** – the number of times this condition will become active/true
- **Interval (mins)** – the number of minutes to wait between each recurring interval
- **Interval (secs)** – the number of seconds to wait between each recurring interval

One Time Condition

Use One Time triggers to run a macro once only on a give date and time. Typical scenarios include:

- Launch a macro for special one-time event



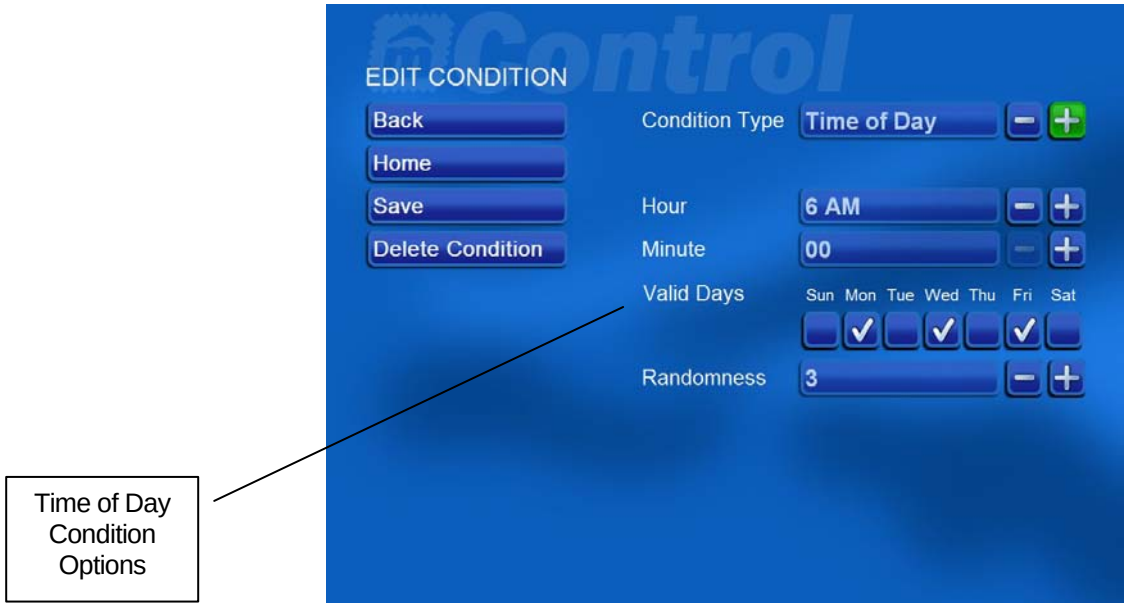
The One Time options provide the following functions:

- **Hour** – the hour when the one time condition should become active
- **Minute**– the minute when the one time condition should become active
- **Calendar** – the date on which the one time condition should become active

Time of Day Condition

Use Time of Day condition to run macros daily at a given time. Typical scenarios include:

- Launching a macro to shut down outside lights at approximately 11:00pm everyday
- Launch a macro to turn on sprinkler system every Wednesday and Sunday at 6:00am exactly.



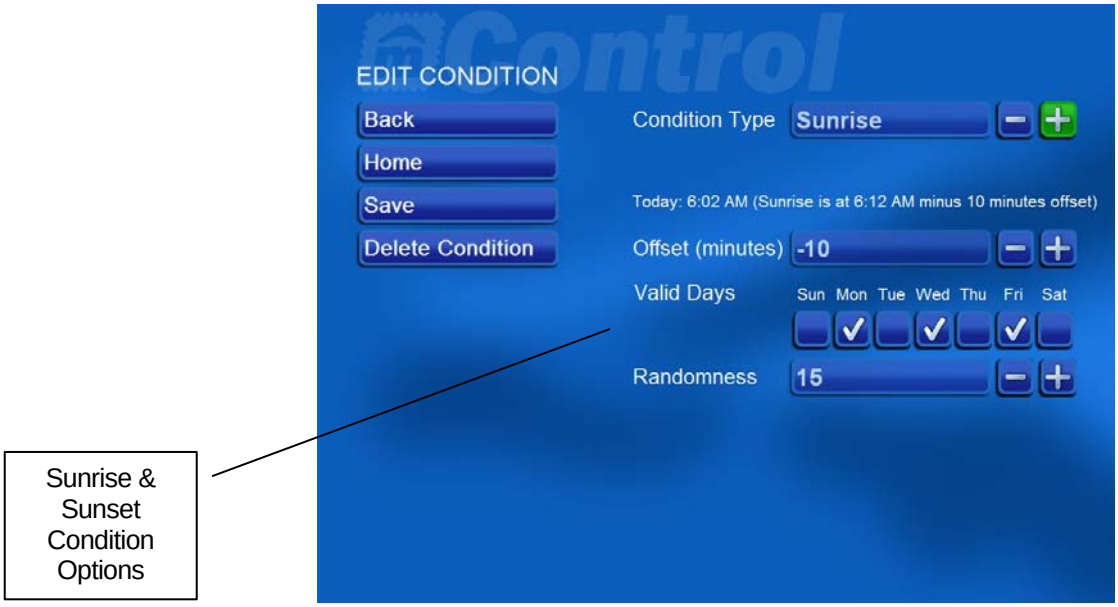
The Time of Day Trigger fields provide the following functions:

- **Hour** – the hour when the one time event should be triggered
- **Minute** – the minute when the one time event should be triggered
- **Valid days** – the days of the week on which the condition is valid
- **Randomness** – a random factor, shown in minutes, of when the trigger should happen. Use this field to act as a security measure – so that outsiders will not see your triggers acting daily at the exact same time. For example, if you have selected “10” for the Randomness field and 12:15 PM as the trigger hour and minute, the trigger will happen sometime within a window of time between 12:05 PM and 12:25 PM.

Sunrise/Sunset Conditions

Use Sunrise and Sunset conditions to run macros upon sunrise and sunset. Typical scenarios include:

- Turning on outside lights 5 minutes before sunset
- Turning off outside lights 20 minutes before sunrise



The Sunrise/Sunset Trigger fields provide the following functions:

- **Offset** – the offset (in minutes) to subtract/add to the time of sunrise/sunset trigger
- **Valid days** – the days of the week on which the condition is valid
- **Randomness** – a random factor, shown in minutes, of when the trigger should happen. Use this field to act as a security measure – so that outsiders will not see your triggers acting daily at the exact same time. For example, if you have selected "10" for the Randomness field and sunrise as the trigger mechanism, the trigger will happen sometime within a window of time between 10 minutes before or after sunrise.

Sunrise/sunset triggers are calculated for each day by mControl. The calculation for sunrise/sunset is performed using location settings in the configuration area of mControl. The calculated time including offset will be shown underneath the settings buttons.

mControl uses the Civil (-6° from the horizon) parameters to arrive at sunrise and sunset times, based on the enter location.

To use other calculation methods, navigate to the `C:\Program Files\Embedded Automation\mControl\server` directory and use a text editor to edit the `mServer.exe.config` file. Locate the section associated with the "SunRiseZenith" parameter and select an alternate calculation method.

```
<!-- Zenith: Sun's zenith for sunrise/sunset calculations:
              OFFICIAL     = 90 degrees + 50 minutes = -0.8333..
              CIVIL        = 96 degrees   (default if none specified)
              NAUTICAL     = 102 degrees
              ASTRONOMICAL = 108 degrees -->
<add key="mAuServer.SunRiseZenith" value="CIVIL"/>
```

Also, you may want to use time offsets (and random offsets) to tailor the best sunrise and sunset times for your specific location.

Macro Actions

Macros can consist of one or more actions. Use Macro Actions to define and enable the actions within a macro.

The following types of actions are available for a macro:

Actions	Meaning
Device	Send a command to a device.
Delay	Perform a delay for a given period of time.
IR	Send an IR message.
Macro	Initiate another macro.
Send Mail	Send an email.
Run Application	Launch an application for execution.

For deterministic timing, use the following table to calculate the duration of a macro:

Action Type	Duration of the Macro Action (Before Next Action Starts)
Device	The automationCmdsDelay parameter (in the mServer.exe.xml file), which defines the minimum amount of time between commands for each protocol. This delay is relevant when commands are queued as a result of quick manual operation or within macros. This can be adjusted on a protocol by protocol basis within the mServer.exe.xml using the automationCmdsDelay parameter. Changes below the default value are not recommended as it can have adverse effects on how messages are handled for the specific protocol.
Delay	The duration of the delay
All other actions	50ms

Device Actions

Use a Device action to send a command to a device. Typical scenarios include:

- Turn a hallway light on.
- Turn a porch light off.

The Device Action options provide the following functions:

- **Zone** – the zone the triggering device is located within
- **Device** – the device which will be used for the action
- **Command** – the command to send to the device

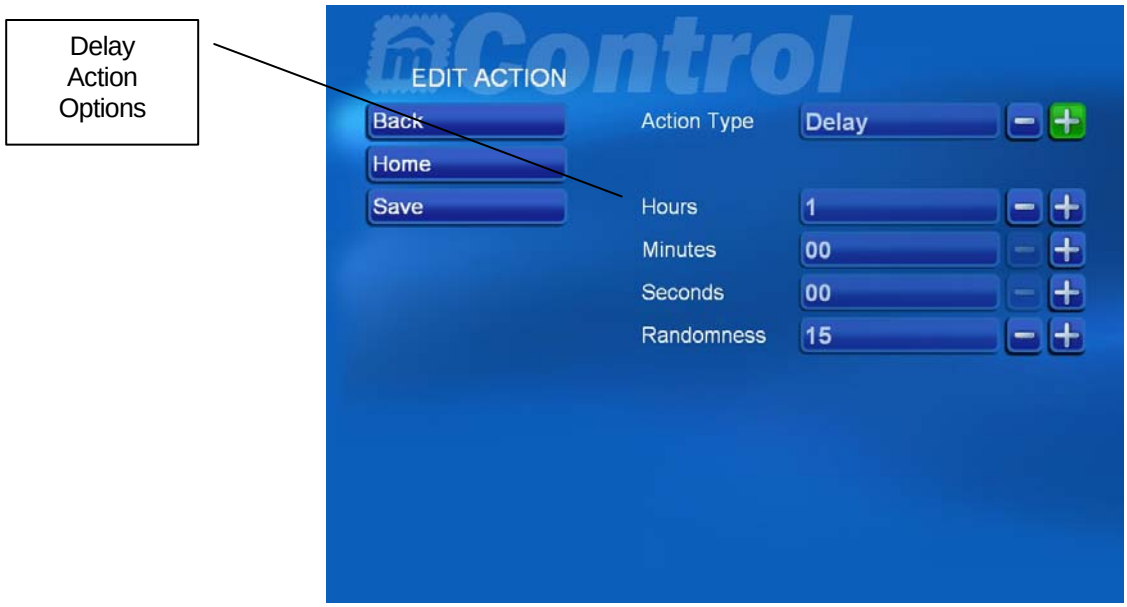
The following table descibes the available settings for device actions:

Device Type	Values
Binary Switch	**ON**: Action will turn on device. *Previous device status = Off (-1 or 0) or On (where n>0) → Subsequent device status =100* **OFF**: Action will turn off device. *Previous device status = Off (-1 or 0) or On (where n>0) → Subsequent device status =Off (-1)*
Multi-level Switch	**ON**: Action will turn on device at On Level Value *Previous device status = Off (-1 or 0) or On (where n>0) → Subsequent device status = On Level value* **OFF**: Action will turn off device. *Previous device status = Off (-1 or 0) or On (where n>0) → Subsequent device status =Off (-1)* **DIM BY X%**: Action will dim device by X%, where X is the granularity set device within the Advanced section of the Edit Device page. *Previous device status = Off (-1 or 0) or On (where n>0) → Subsequent device status = Dim by X%* **BRIGHT BY X%**: Action will bright device by X%, where X is the granularity set device within the Advanced section of the Edit Device page. *Previous device status = Off (-1 or 0) or On (where n>0) → Subsequent device status = Bright by X%*
Thermostat	**MODE**: Set mode of thermostat **FAN**: Set fan mode **COOLING**: Set cool set point **HEATING**: Set heat set point
Camera	**COMMAND**: Record Video or Take Snapshots For snapshots, specify the Number of snapshots to take and the Interval (in seconds) between each snapshot. For video, specify the Duration (in seconds) and Framerate (in frames/second).

Delay Actions

Use a Device action to send a command to a device. Typical scenarios include:

- Add a delay between commands, for example, a 15 minute delay between turning a device on and then turning the same device off.



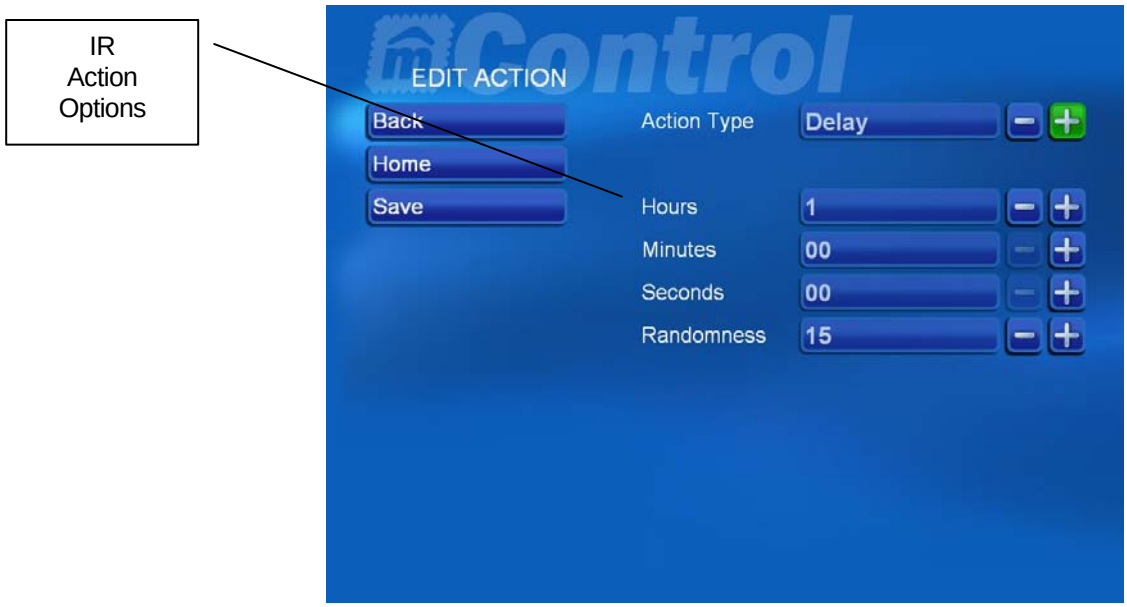
The Delay Action options provide the following functions:

- **Hours** – the amount of hours to delay
- **Minutes** – the amount of minutes to delay
- **Seconds** – the amount of seconds to delay
- **Randomness** – a random factor, measured in minutes, to add to the delay. Use this field to act as a security measure – so that outsiders will not see your actions acting at the exact same time. For example, if you have selected "15" for the Randomness field and 1 hour and 15 minutes as the other fields, then the delay will be in a window between a minimum of 1 hour and 15 minutes and up to 1 hour and 30 minutes.

IR Actions

Use an IR action to send an IR command to a device. Typical scenarios include:

- Send an IR command to a DVD recorder to start recording.



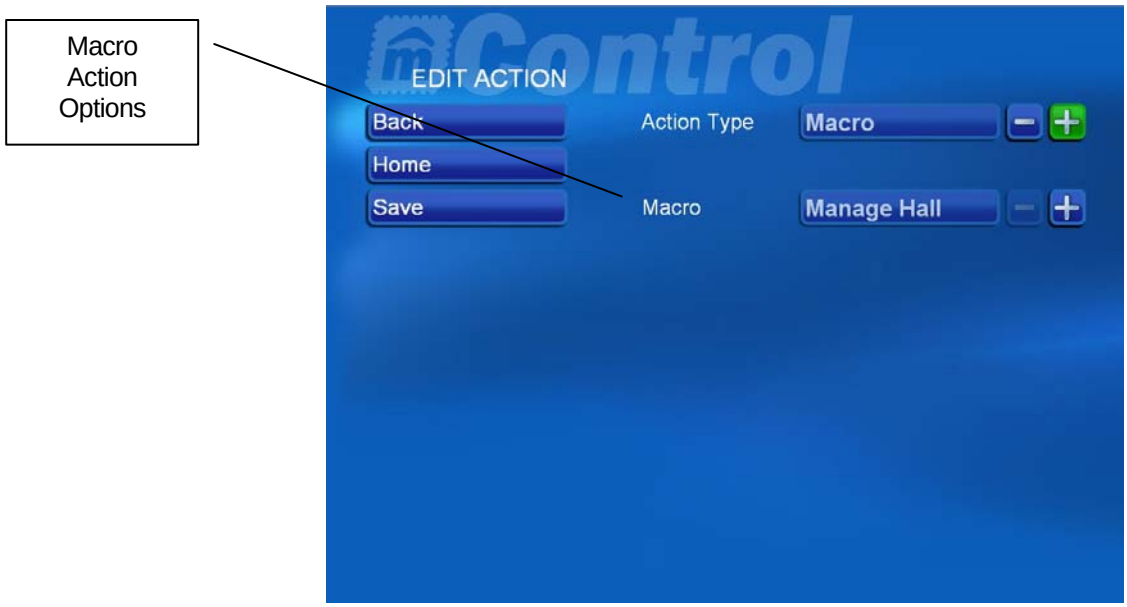
The IR Action options provide the following functions:

- **IR Command** – the IR command that will be sent as part of this action. This command was "Learned" or entered by cutting and pasting raw CCF text in the IR Command section of mControl.
- **IR Device** –the device (or "port") from which the IR command is to be sent from.
- **Repeat** – the amount of times this action is to be repeated. This may be useful for the case where multiple commands are required, for example, to turn channels on a TV.

Macro Actions

Use a Macro action to initiate another macro. Typical scenarios include:

- Launch a macro which encapsulates frequently used actions, such as turning on or off a set of lights.



The Macro Action options provide the following functions:

- **Macro** – the macro to initiate.

Please ensure that you do not create "circular" macro loops, that is, the iniating macro is called from within a "sub" or "called" macro.

Send Mail Actions

Use a Send Mail action to send an email. Typical scenarios include:

- Send an email to your cell phone if a motion detector is activated.

The Send Mail Action options provide the following functions:

- **SMTP Server** – use the SMTP mail server address provided by your local ISP or other provider.
- **Email To** – the primary email address to send to.
- **CC To** – the email address which should be CC'ed.

Run Application Actions

Launch an external application, program or batch. Typical scenarios include:

- Initiate a custom application (e.g., backs-up a database).

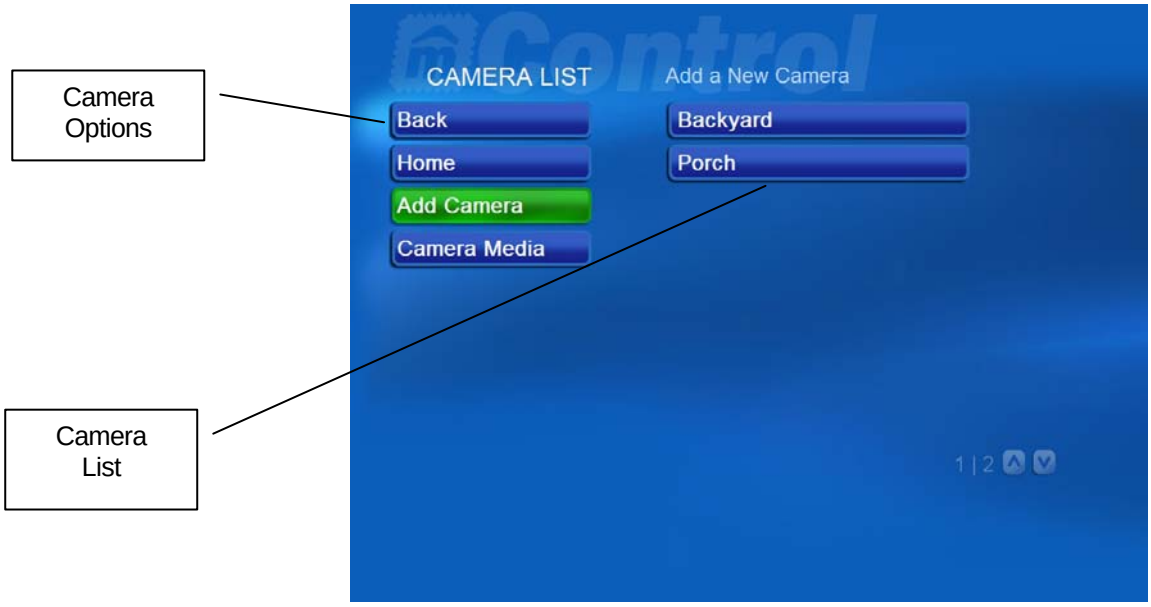
Please be aware that calling external programs as part of macro actions is a security risk. By using this feature, you can enable the execution of programs at the highest privilege on the computer hosting the mControl Automation Service – including from remote computers using the mControl User Interface Client. By default this feature is disabled and by enabling it the user assumes the risk associated with this functionality.

The Run Application Action options provide the following functions:

- **Application Path** – path of the external application to launch.
- **Parameters** – the command line parameters for the external application.

Camera Screen

The Camera Screen allows modifying the configuration of existing or new cameras.



Automation Options

The Automation Options buttons provide the following functions:

- **Back** – goes back to the Settings Screen
- **Home** – goes back to the Zone View Screen
- **Add Camera** – allows a configuration of a new camera
- **Camera Media** – allows viewing of recorded camera video/snapshots

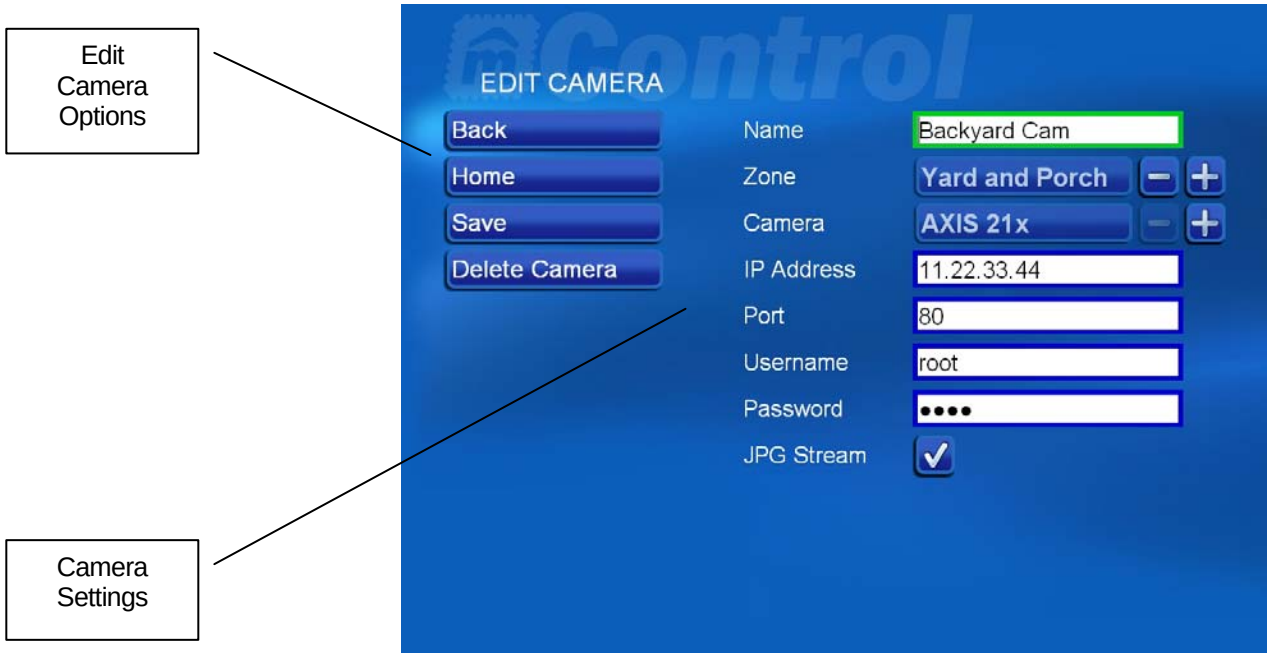
Camera List

This section provides the following configuration options:

- **Edit Camera** – by cursoring to a camera name and pressing OK, access to the Edit Camera Screen is provided

Add Camera and Edit Camera Screens

The Add Camera and Edit Camera screens allow for the configuration of a camera.



Edit Camera Options

The Edit an Action Options buttons provide the following functions:

- **Back** – goes back to the Camera Screen
- **Home** – goes back to the Zone View Screen
- **Save** – saves the changes for the current action and returns to the Camera Screen
- **Delete Camera** – deletes the camera and returns to the Camera Screen

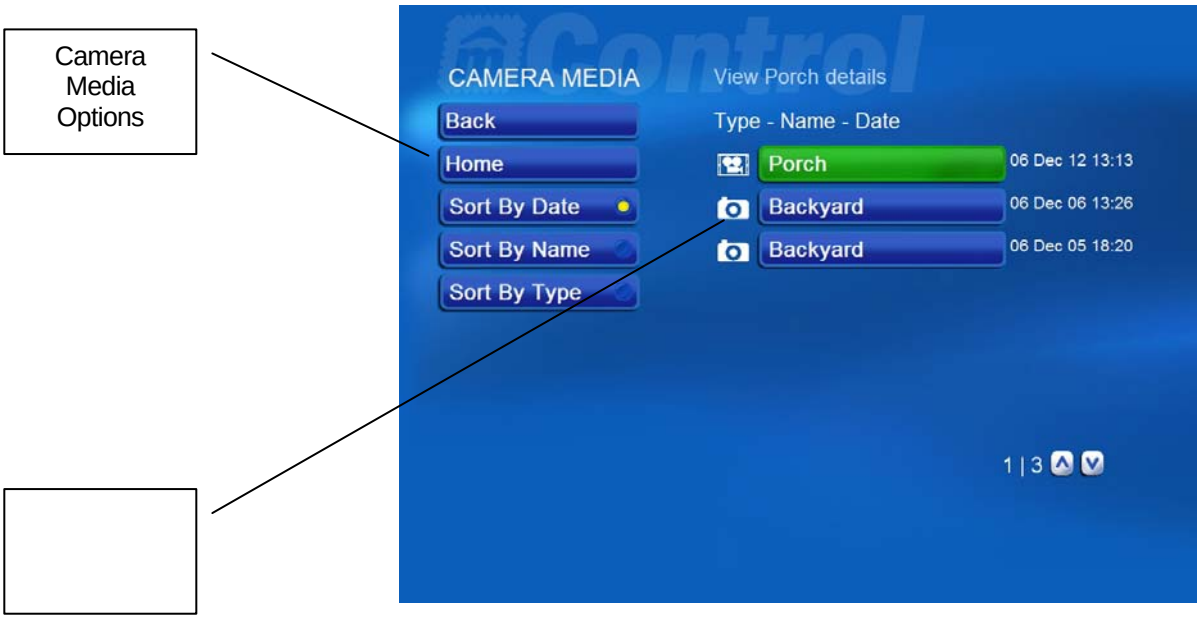
Camera Settings

This section provides the following configuration options:

- **Name** – the name of the camera (Text entry, up to 16 characters)
- **Zone** – the location of the camera
- **Camera** – the camera type (refer to the list provided in Supported Hardware)
- **IP Address** – the IP address of the camera. The address can also be in the form of host.domain.com.
- **Port Address** – the http port used by mControl to talk with the camera (usually 80)
- **Username** – username for login
- **Password** – password for login
- **JPG Stream** – select this to retrieve still images (refreshed every 5 seconds) instead of a live video feed. This may be useful for cases where the browser may not handle streaming (or ActiveX) or where performance may be a concern.

Camera Media Screen

The Camera Media screen allows viewing of recorded video and snapshots.



Edit Camera Options

The Edit an Action Options buttons provide the following functions:

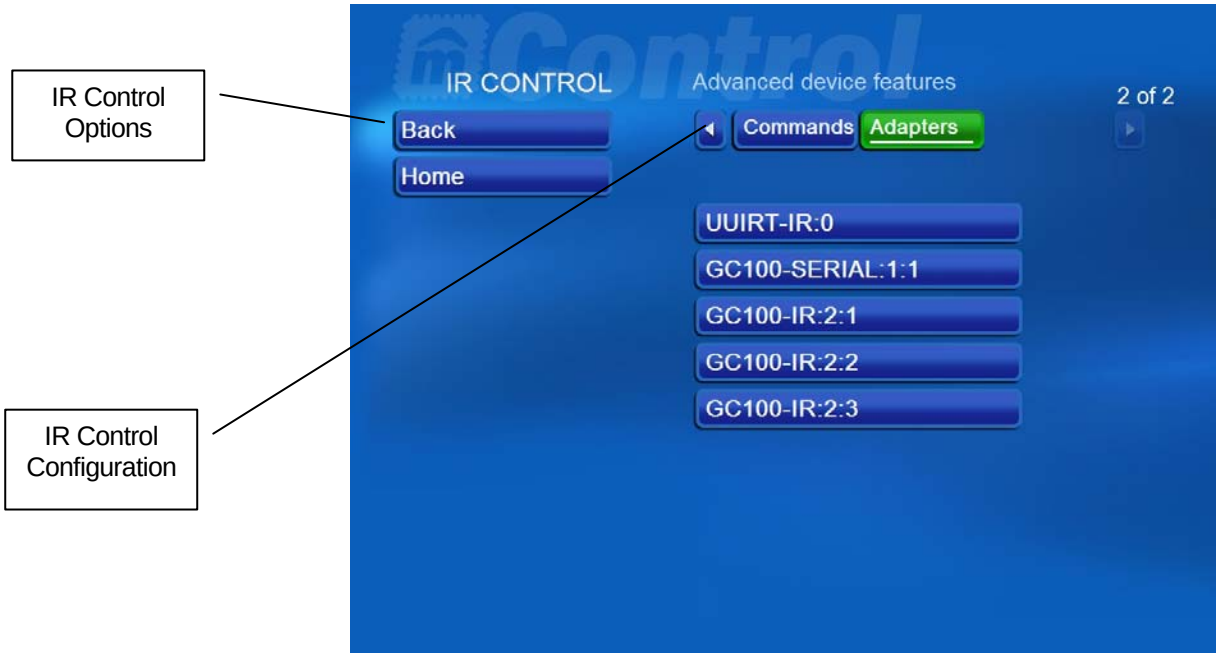
- **Back** – goes back to the Camera Screen
- **Home** – goes back to the Zone View Screen
- **Sort by Date** – shows the list of recorded videos and snapshots, sorted by date/time
- **Sort by Name** – shows the list of recorded videos and snapshots, sorted by camera name
- **Sort by Type** – shows the list of recorded videos and snapshots, sorted by media type

Camera Media List

This section provides a list of recorded video and snapshots. View media by cursoring to and selecting an item in the media list.

IR Control Screen

The IR Control screen allows configuration of IR functionality.



IR Control Options

The Automation Options buttons provide the following functions:

- **Back** – goes back to the Settings Screen
- **Home** – goes back to the Zone View Screen

IR Control Configuration

This section provides the following configuration options:

- **Commands** – add, modify and delete IR commands
- **Adapters** – view available adapter ports. These correspond to the available Global Caché ports available.

Adapters Ports

View the IR ports available for sending commands to.

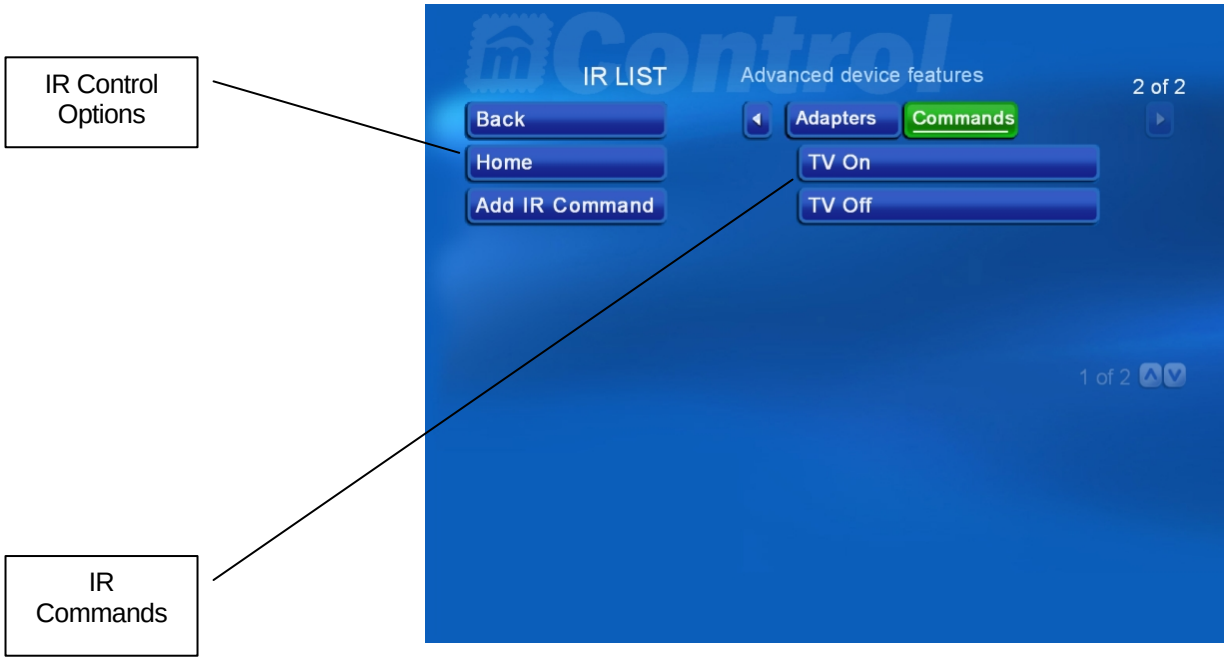
Adapter Ports

When you select the Adapters tab, this screen provides a list of all the available adapter ports. These ports are used to send and receive IR commands. Use one of these ports in macro actions to define the destination location of the IR command.

mControl currently only display the ports, as configured within the Global Cache or USB UIRT adapters or – you can not edit, delete or add ports.

IR Commands

Shows a list of all IR commands and allows creation of new IR commands.



IR Command Options

The Automation Options buttons provide the following functions:

- **Back** – goes back to the Settings Screen
- **Home** – goes back to the Zone View Screen
- **Add IR Command** – allows creation of a new IR command

IR Commands

This section shows the list of IR commands available for macros.

mControl Client for Windows Mobile

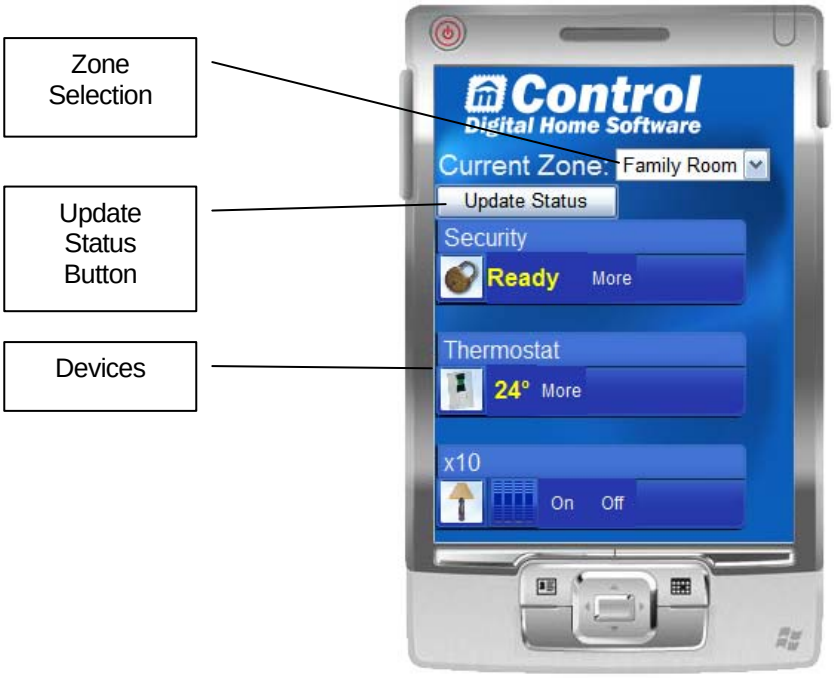
To view mControl's View Zone screen from a Windows Mobile device, use Internet Explorer on the device to access mControl.

- For Windows XP and Windows Vista access mControl via http://ServerIPAddress:29990/mobile.aspx
- For Windows Home Server, access mControl via http://ServerIPAddress/mControl/mobile.aspx

Ensure that you have selected either the Default or Desktop view modes to properly display mControl for Windows Mobile. mControl for Windows Mobile will not be displayed properly if the view mode is One Column. For information on Windows Mobile view modes, please see: http://www.microsoft.com/windowsmobile/gettingstarted/web_wm6.mspx

mControl Mobile Zone View

The mControl Mobile Zone View, which is considered the “main menu” of mControl, provides a summary of all the defined zones and all devices within a selected zone.

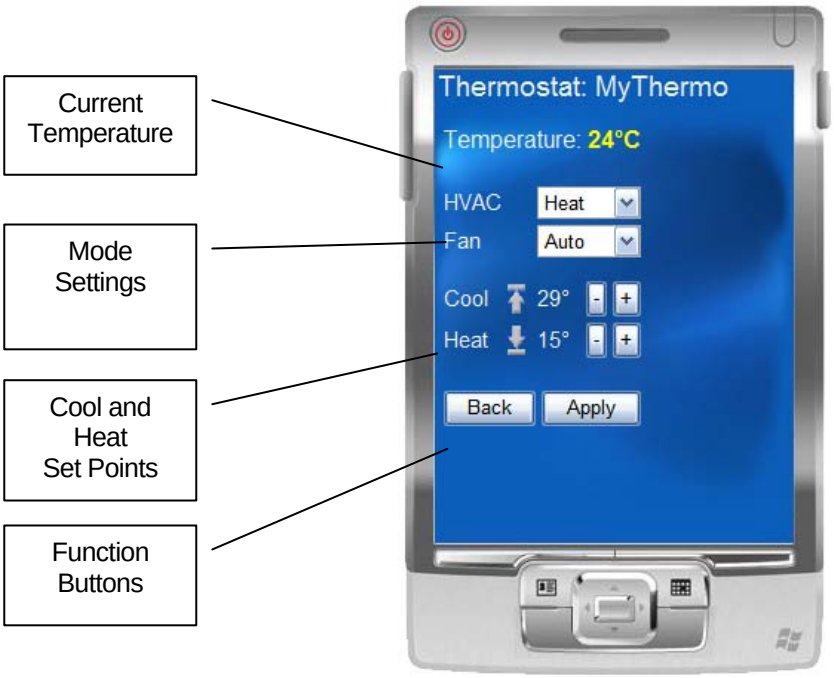


Option	Option Description
Zone Selection	Use the Zone Selection drop-down list to select the Zone to view
Update Status Button	Use the Update Status Button to retrieve the current status of mControl devices. Use this function, if device changes may have happened since opening the page.
Devices	The name, the image, the current status and function buttons for the devices are provided. Use the function buttons to operate the device.

Function button presses which initiate commands and macros on the mControl Automation Service will automatically cause a refresh of the page – thereby displaying the updated status.

mControl Mobile Thermostat View

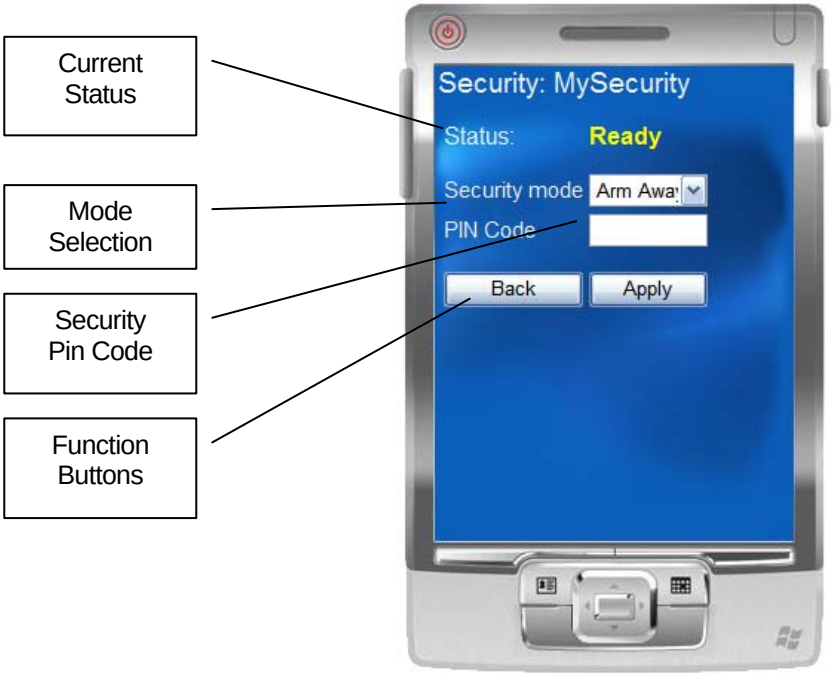
By selecting the “More” button on a thermostat device, the mControl Mobile Thermostat view is shown.



Option	Option Description
Current Temperature	Shows the current temperature
Mode Settings	To adjust the mode, select the HVAC or Fan mode.
Cool and Heat Set Points	To adjust the set points for cooling or heating, use the "-" and "+" buttons
Function Buttons	Use the "Back" button to return to the mControl Mobile Zone View page. Use the "Apply" button to apply the Mode Settings and/or Cool and Heat Set Points.

mControl Mobile Security View

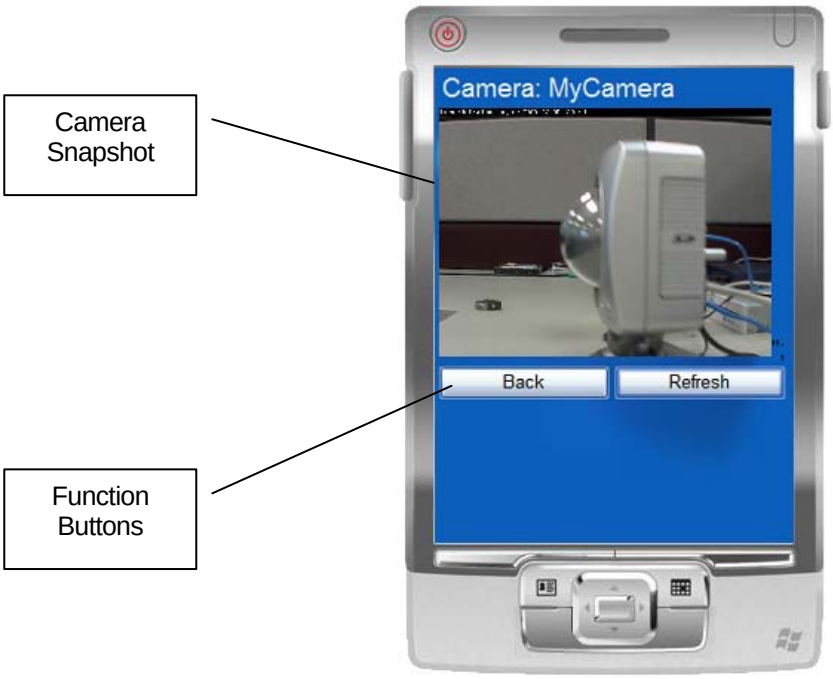
By selecting the “More” button on a security device, the mControl Mobile Security view is shown.



Option	Option Description
Current Status	Current status of the security system device.
Mode Selection	Use this drop-down list to select the mode for the security system device
Security Pin Code	Enter the security code to arm or disarm your security system
Function Buttons	Use the “Back” button to return to the mControl Mobile Zone View page. Use the “Apply” button to apply the Mode Selection.

mControl Mobile Camera View

By selecting the “More” button on a camera device, the mControl Camera view is shown.



Option	Option Description
Camera Snapshot	Near live snapshot from the camera device
Function Buttons	Use the “Back” button to return to the mControl Mobile Zone View page. Use the “Refresh” button to retrieve another snapshot.

mControl Mobile Irrigation View

Irrigation devices are currently unsupported on the mControl client for Windows Mobile.

Advanced mControl Functionality

Using Macros

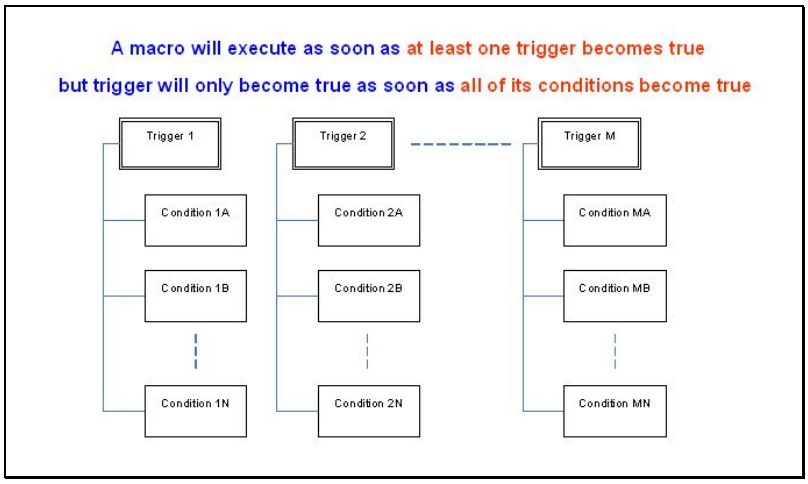
Macro Basics

There are three elements to mControl macros:

- Actions – each macro has one or more actions. These are the set of commands executed by mControl for the macro once it becomes active. They are executed in order, as defined in the Macro List page.

- Triggers – each macro has one or more triggers. Once anyone of these triggers becomes true, it will initiate the macro's actions.

- Conditions – each macro has one or more conditions. All conditions for a trigger must be true for the complete trigger to be true.



Typically, a macro may only have one or two triggers and each trigger may contain just one condition. However, it is possible to create sophisticated macro initiation by using multiple conditions within each trigger.

If the macro has been assigned to a zone and is displayed, it can be triggered manually.

Summary of Macro Conditions

Device-Based Macro Conditions

The following table provides a list of available device-based macro conditions:

Device Class	Devices	Conditions Available
CAMERA	AXIX 21x Series Internet Cameras	Device Change <operator> <Motion>
DEVBILVL	INSTEON Appliance Modules, X10 On/Off Switch/Modules, X10 Motion Sensors, RAKO On/Off Switch/Modules, Z-Wave On/Off Switch/Modules, Z-Wave Motion Sensor	Device Change <OFF or ON>
DEVMULTILVL	INSTEON LampLinc Modules, X10 Dimmable Switch/Modules, X10 2-Way Dimmable Switch/Modules, RAKO Dimmable Switch/Modules, Z-Wave Dimmable Switch/Modules Z-Wave Window Shades Modules	Device Change <OFF or ON>, Device Level <operator> <value=0-100>
DEVBILVL-GRP	INSTEON SwitchLinc On/Off Switches	Device Change <OFF or ON>, Device Change <Group #> <OFF or ON>
DEVMULTILVL-GRP	INSTEON SwitchLinc Dimmers, INSTEON KeypadLinc Modules	Device Change <OFF or ON>, Device Level <operator> <value=0-100> Device Change <Group #> <OFF or ON>
ELKSECURITY	ELK-M1 Alarm System Module	Device Change <operator> <Arming State>, Device Change <operator> <Alarm State>, Device Change <Zone #> <operator> <Zone Status>
SECURITY	Ademco Vista Alarm Module, DSC PowerSeries System Module	Device Change <operator> <Arming State>, Device Change <operator> <Alarm State>
EZRAIN	EZRain Irrigation Module	Device Change <operator> <Program #>, Device Change <operator> <Valve #>, Device Level <operator> <Program #>, Device Level <operator> <Valve #>
HVAC	Aprilaire Serial Thermostat, ELK-M1 Controlled Thermostat, HAI Omnistat RC-Serial Thermostat, PROLIPHIX NT-series Thermostat, RCS TXB16 X10 Thermostat, Z-Wave Thermostats	Device Change <operator> <HVAC Model>, Device Change <operator> <Fan Mode>, Device Change <operator> <SP Heat value>, Device Change <operator> <SP Cool value>, Device Change <operator> <Temperature value>, Device Change <operator> <Temperature Scale>, Device Level <operator> <HVAC State>, Device Level <operator> <Fan Mode>, Device Level <operator> <Fan State>, Device Level <operator> <SP Heat value>, Device Level <operator> <SP Cool value>, Device Level <operator> <SP Status>, Device Level <operator> <Temperature value>, Device Level <operator> <Temperature Scale>
RELAY	GC100 Relay Output Port, X10 I/O Modules	Device Change <OPEN or CLOSE>

Time-Based Macro Conditions

The following table provides a list of available time-based macro conditions:

Condition	Options Available	Comments
One Time Only	Date, Time	Use for one time operation
Recurring Timer	Valid Days, Start Time, Interval, Occurrences	Use to trigger operation multiple times, with intervals between each time
Time of Day	Valid Days, Start Time (Sunset, Sunrise, Specific time), Randomness	Use for scheduled daily activities
Time Range	Valid Days, Start Time (Sunset, Sunrise, Specific time), End Time (Sunset, Sunrise, Specific time)	Use with another condition to control operation during a specified time period (for example, night time – sunset to sunrise)

Other Macro Conditions

The following table provides a list of available other macro conditions:

Condition	Options Available	Comments
External Event	External commands	Use the "External command" (XSLT file) to evaluate a message sent by another application to trigger a macro
IR Event	IR command	Upon recognition of an incoming IR signal against a previously saved/learned IR command, trigger a macro
Media Center Event	Media Type, Action, PC Name	Use an event from a Media Center to trigger a macro

Summary of Macro Actions

Device-Based Macro Actions

The following table provides a list of available device-based conditions:

Device Class	Devices	Macro Actions Available
IPCAMERA	DLINK DCS-900 Internet Camera, DLINK DCS-2100 Internet Camera, DLINK DCS-3220/6620 Internet Camera, DLINK DCS-5300 PTZ Internet Camera, AXIX 21x Series Internet Cameras, Panasonic Internet Camera, Linksys WVC54GCA IPCAM	SNAPSHOT <# Images> <Interval>, SNAPSHOT STOP, RECORD <Frames/sec> <Duration>, RECORD STOP, MOVE <Direction>, ZOOM <In, Out>, AUDIO <On, Off>
BINSWITCH	INSTEON Appliance Modules, INSTEON SwitchLinc On/Off Switches, X10 On/Off Switch/Modules, RAKO On/Off Switch/Modules, Z-Wave On/Off Switch/Modules,	ON, OFF
MLVLSWITCH	X10 Dimmable Switch/Modules, X10 2-Way Dimmable Switch/Modules, RAKO Dimmable Switch/Modules, Z-Wave Dimmable Switch/Modules	ON <Value>, OFF, DIM BY %, BRIGHT BY %
MLVLSWITCH-INST	INSTEON LampLinc Modules, INSTEON SwitchLinc Dimmers, INSTEON KeypadLinc Modules,	ON <Value>, OFF, DIM BY %, BRIGHT BY %, FASTON, FASTOFF
ELKALARMSYS	ELK-M1 Alarm System Module	RUNTASK <Task #>, KEYPADFN <KPF #>, CONTROLOUTPUT <Output #>
SHADES	Z-Wave Window Shades Modules	OPEN <Value>, CLOSE, OPEN BY %, CLOSE BY %
SPRINKLER	EZRain Irrigation Module	START PROGRAM <Program #>, START VALVE <Valve #>, SKIP <Direction>
THERMOSTAT	Aprilaire Serial Thermostat, ELK-M1 Controlled Thermostat, HAI Omnistat RC-Serial Thermostat, PROLIPHIX NT-series Thermostat, RCS TXB16 X10 Thermostat, Z-Wave Thermostats	SET HEAT SETPOINT <value>, SET COOL SETPOINT <value>, SET MODE <Mode>, SET FAN <Fan Mode>, MOVE SETPOINT <UP/DOWN>,
RELAY	GC100 Relay Output Port, X10 I/O Modules	OPEN, CLOSE

Other Macro Actions

The following table provides a list of available other macro actions:

Action	Options Available	Comments
Delay	Timespan, Randomness	Use to add a delay between consecutive commands
Send Email	SMTP Server, To, Cc, Subject	Use to send an email (or SMS message) within a macro for notification
IR Code	IR Device, IR Command, Repeat Count	Use to blast an IR command through a device to affect a IR device (e.g., TV or receiver)
Run Macro	Macro, Action	Use to control another mControl macro
Run Application	Application, Parameters	Use to run another PC software application

Triggering a Macro Based on a Device Status Change

To trigger a macro based status change of a particular device, use a trigger with a Device Change condition. Typical examples include:

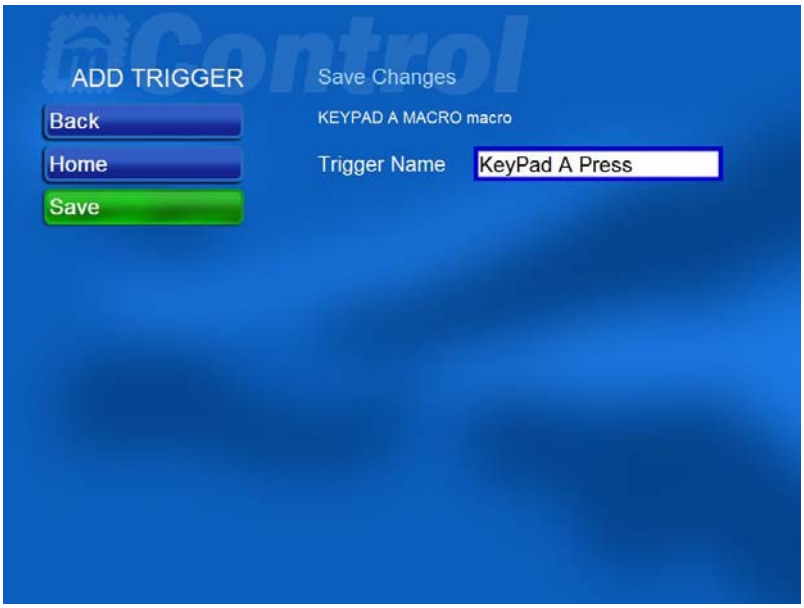
- If a motion detector goes off, you may want to turn on a set of lights for 5 minutes and sound a chime.
- If someone presses a switch, turn on a set of lights and send IR commands to turn on AV devices

Create the Macro

- Navigate to the “Settings” page
- Select the “Automation” option
- Select the “Add Macro” option
- Enter the information required to create the macro, including:
  - **Name** – the name of the macro
  - **Zone** – the zone to assign the macro within
  - **Display in Zone** – to enable the display of the macro within the zone
  - **Image** – the image to associate with the macro
- Press “Save” to save the macro

Add a Trigger to the Macro

- Select “Add Trigger” to add a trigger to this macro.
- Enter the information required to create the trigger, including:
  - **Name** – the name of the macro
- Press “Save” to save the trigger



Add Conditions to the Trigger

- From the Macro Details screen, select the "Trigger" tab and then select the trigger from the list within which the condition will be added.

- Select "Add Condition" to add a condition to this trigger.
- Select the Condition Type to be the "Device Change" condition, which is the condition which will be required to come true to enable the trigger:
  - **Device Zone** – the zone in which the triggering device is located
  - **Device** – the triggering device (e.g., the motion detector or paddle press)
  - **Property** – the device property to use in the condition (e.g., status level)
  - **Command** – the command which must true for the condition to be true
- Press "Save" to save the condition

Add Actions to the Macro

- From the Macro Details screen, select the “Actions” tab and add actions to the macro

- Continue to add actions as required.

Triggering Macros Using INSTEON SwitchLinc or KeypadLinc Buttons

Triggering macros using INSTEON SwitchLinc or KeypadLinc buttons is a type of “device” trigger. Button presses on these devices will generate INSTEON group messages to all the devices linked to it.

First, ensure that the device is created within mControl. This will automatically create a link from the INSTEON PowerLinc adapter (master) to the device (slave).

Second, to allow the INSTEON Adapter to see these button presses, you must “reverse link” the device – in this case, the device (master) is linked to the INSTEON PowerLinc adapter (slave). To do this you must hold down the button on the device and once link mode has been initiated (usually indicated by a flashing light), then hold down the INSTEON PowerLinc’s SET button until the device registers the link (again, usually indicated by a flashing light).

Lastly, select the group number associated with button as part of the Device Change condition option. The following table provides a summary of button/group association:

Device	***Button***	***Group***	***Command***
SwitchLinc Dimmers/Relays	ON (Load)	1	On
	OFF (Load)	1	Off
KeypadLinc *Factory Setting button settings are provided in this table.*	ON (Load)	1	On
	OFF (Load)	1	Off
	A	3	On/Off Toggle
	B	4	On/Off Toggle
	C	5	On/Off Toggle
	D	6	On/Off Toggle

If your KeypadLinc is configured for 8 buttons, instead of 6, you can expand the Group commands available to mControl by adjusting the "GroupTriggersMax" value within module definition for the KeypadLinc within the mServer.exe.xml file located in the C:\Program Files\Embedded Automation\mControl\server directory.

Triggering a Macro using Time

Use “Time” triggered macros when you need perform home automation functions at a particular time. Typical examples include:

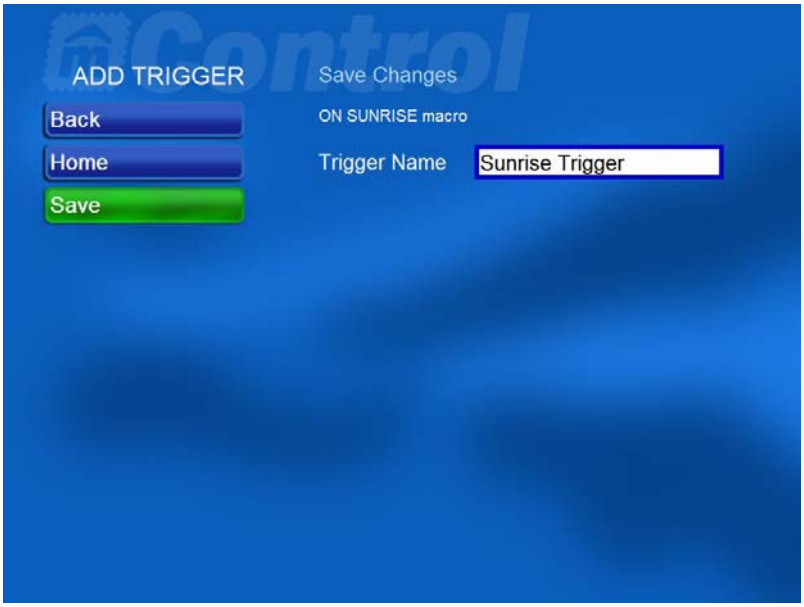
- To turn on lights at 7:00pm and then turn them off at 11:00pm.
- To run sprinklers at 7:15am on Tuesday and Thursdays for 45 minutes.

Create the Macro

- Navigate to the “Settings” page
- Select the “Automation” option
- Select the “Add Macro” option
- Enter the information required to create the macro, including:
  - **Name** – the name of the macro
  - **Zone** – the zone to assign the macro within
  - **Display in Zone** – to enable the display of the macro within the zone
  - **Image** – the image to associate with the macro
- Press “Save” to save the macro

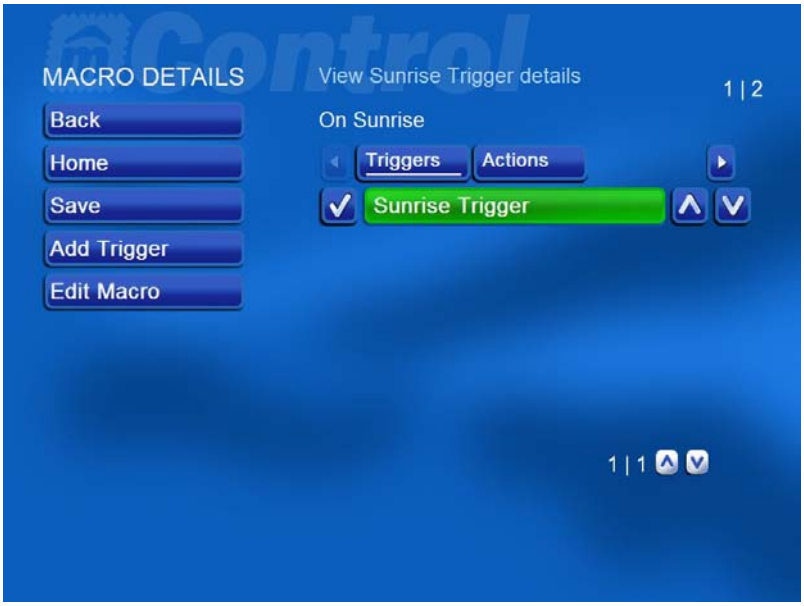
Add a Trigger to the Macro

- Select “Add Trigger” to add a trigger to this macro.
- Enter the information required to create the trigger, including:
  - **Name** – the name of the macro
- Press “Save” to save the trigger

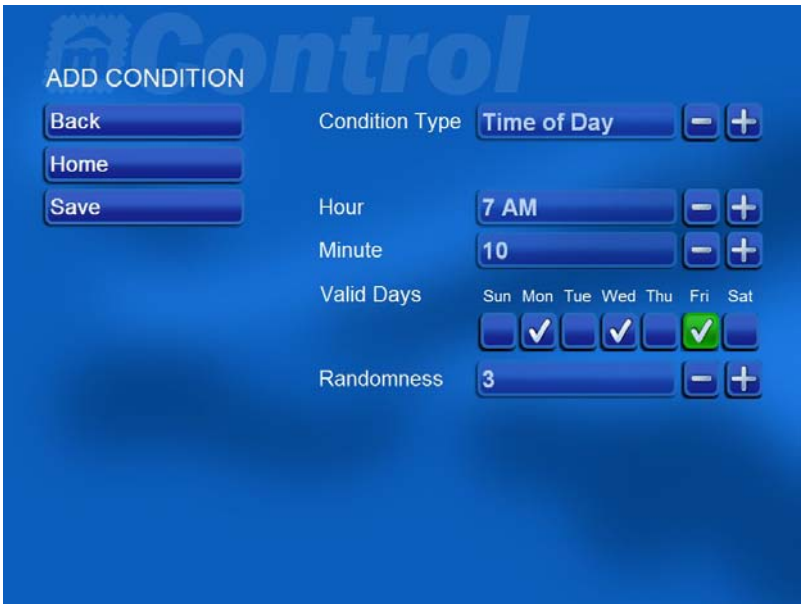


Add Conditions to the Trigger

- From the Macro Details screen, select the “Trigger” tab and then select the trigger from the list within which the condition will be added.



- Select “Add Condition” to add a condition to this trigger.
- Select the Condition Type to be the “Time of Day” condition, which is the condition which will be required to come true to enable the trigger:
  - **Hour** – the hour within the day when the condition is true
  - **Minute** – the minute within the day when the condition is true
  - **Valid Days** – the days in the week on which the condition is true
  - **Command** – randomness, in minutes, to apply to the condition
- Press “Save” to save the condition



Add Actions to the Macro

- From the Macro Details screen, select the “Actions” tab and add actions to the macro

- Continue to add actions as required.

Using the Recurring Timer with Macros

Use the "Recurring Timer" condition to activate triggers multiple times with a time interval. The recurring timer is useful when a set of actions must be run repeatedly for a period of time.

Create the Macro to Utilize Recurring Timers

- Navigate to the "Settings" page
- Select the "Automation" option
- Select the "Add Macro" option
- Enter the information required to create the macro, including:
  - **Name** – the name of the macro
  - **Zone** – the zone to assign the macro within
  - **Display in Zone** – to enable the display of the macro within the zone
  - **Image** – the image to use for this macro
- Save changes

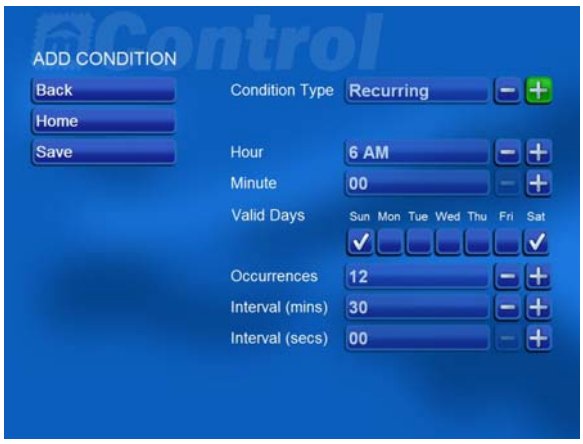
Add a Trigger to the Macro

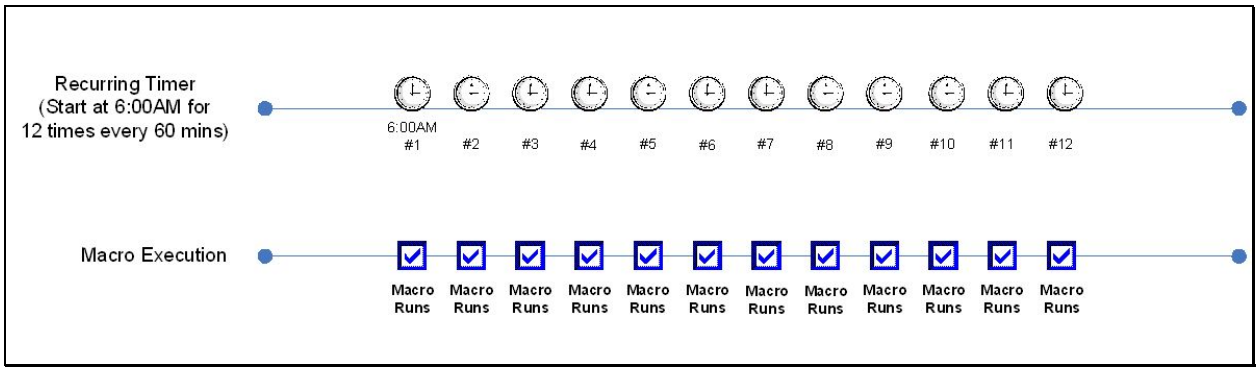
Select “Add Trigger” to add a trigger to this macro. Create a trigger for the macro by pressing the Add Trigger button and then entering a name for the trigger.

Add Conditions to the Trigger

Once the trigger has been saved, select the trigger. Once within the trigger, press the Add Condition button to add a condition.

- Select the Condition Type to be “Recurring”
  - **Condition Type** – select “Recurring”
  - **Hour** – this is the hour to initiate this condition
  - **Minute** – this is the minute to initiate this condition
  - **Valid days** – this is the days on which this condition will be valid
  - **Occurrence** – this is how many times the condition will become true
  - **Interval (mins)** – this is how many minutes between each interval
  - **Interval (secs)** – this is how many seconds between each interval





Add Actions to the Macro

Define the set of actions the macro should execute upon receiving the trigger. Use the "Add Action" button to initiate adding a set of actions for this macro.

The following sample shows a set of actions to take upon activation of the Recurring Timer's condition (and trigger). In this case, mControl will take a picture from the Axis 212 camera.

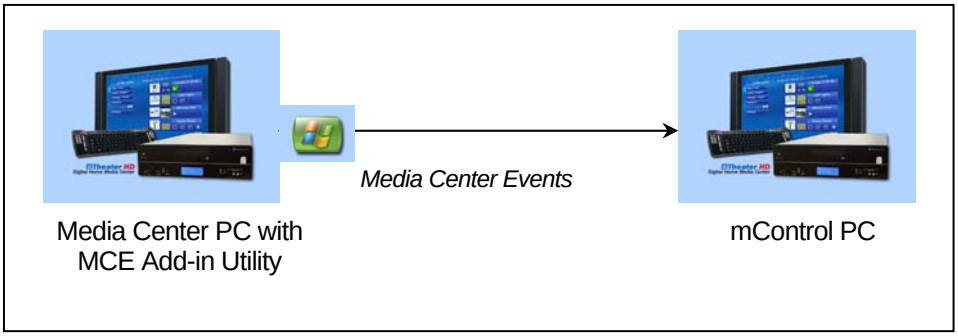
Using MCE Events to Trigger Macros

Use “MCE Event” triggered macros when you want to perform home automation functions at a based on how you are using your Windows XP Media Center Edition 2005 system. For example, you may want to automatically dim lights when you start a DVD movie.

Install and configure the MCE Add-in Utility

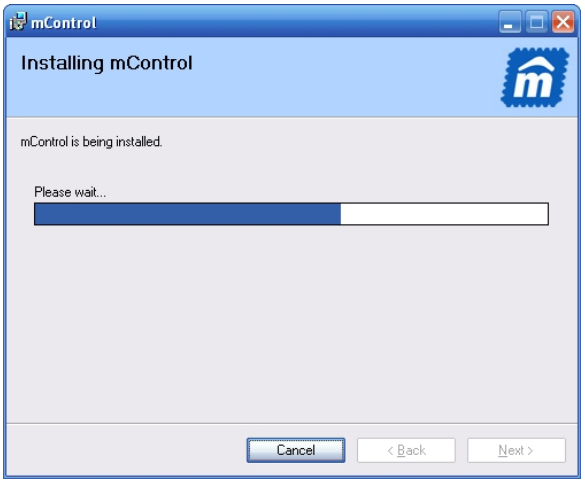
The MCE Add-in Utility listens and forwards MCE Events to mControl. The MCE Add-in Utility uses Windows XP Media Center Edition 2005’s Media State Aggregation Service (MSAS) to retrieve events. Once events are received, the MCE Add-in Utility forwards these events to mControl.

- MCE Add-in Utility must be installed on a MCE machine.
- mControl does not have to be installed an MCE machine.
- The MCE Add-in Utility can be on the same machine as mControl or other machines.
- The MCE Add-in Utility can be installed on multiple machines. Each one of these can be sending messages to mControl.

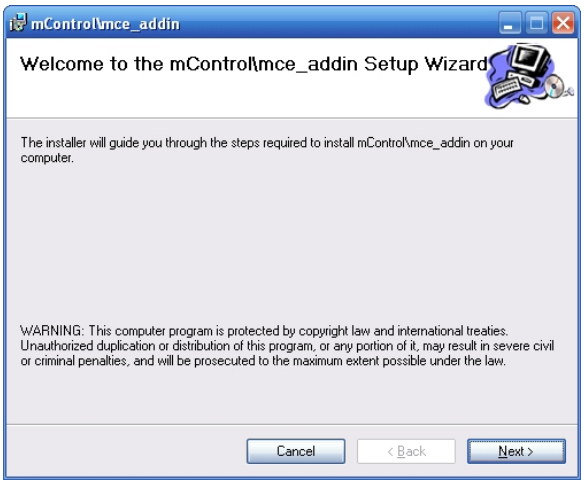


MCE Add-in on the Same PC as mControl
During mControl installation, the MCE Add-in will be automatically installed if the PC being installed on is a MCE system. In addition, the MCE Add-in will be automatically configured to talk to the mControl on the system.

However, if the system is not a MCE system, the MCE Add-in is not installed.



MCE Add-in on a Different PC then mControl
Use the “MceAddins.msi” file from your mControl CD or Zip file to install the MCE Add-in Utility on a different PC.


mControl\mce_addin
Welcome to the mControl\mce_addin Setup Wizard
The installer will guide you through the steps required to install mControl\mce_addin on your computer.
WARNING: This computer program is protected by copyright law and international treaties. Unauthorized duplication or distribution of this program, or any portion of it, may result in severe civil or criminal penalties, and will be prosecuted to the maximum extent possible under the law.
Cancel
< Back
Next >

Once installed, you must configure the MCE Add-in Utility to send messages to the mControl machine.

1. Ensure that there is a network between the PC on which the MCE Add-in Utility is installed and the mControl PC. Make a note of the workstation name or IP address of the mControl machine.

2. On the MCE Add-in Utility PC, navigate to the `C:\Program Files\Embedded Automation\mControl\bin` directory and use a text editor to edit the `MSASAddIn.config` file. Change the <client> parameters to use the mControl PC’s workstation name or IP address instead of “localhost”.

   The example below shows “localhost” changed to “mcontrol”:

```
<client>
    <wellknown type="EmbeddedAutomation.mServerLib.IAuServer, mAuServerLib"
url="tcp://mcontrol:29992/mAuServerURI"/>
    <wellknown type="EmbeddedAutomation.mServerLib.AuServerImpl, mAuServerLib"
url="http://mcontrol:29991/mAuServerURI"/>
</client>
```

Please note, it may be required to reset MCE’s Media State Aggregation Service upon changing the configuration information. The simplest way to do this is to reboot.

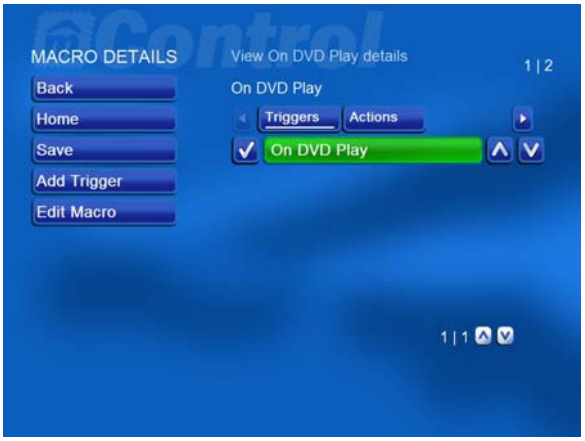
Create the Macro to Utilize MCE Events

1. Create the macro which will use one or more MCE Events (and other triggers) to run a set of actions.

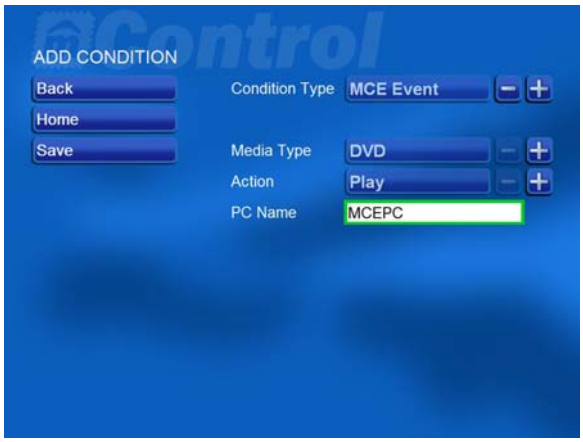
    a. Create the Macro
        i. Navigate to the “Settings” page
        ii. Select the “Automation” option
        iii. Select the “Add Macro” option
        iv. Enter the information required to create the macro, including:
    - **Name** – the name of the macro
    - **Zone** – the zone to assign the macro within
    - **Display in Zone** – to enable the display of the macro within the zone
    - **Image** – the image to use for this macro
        v. Save changes

2. Define how the macro will start by adding a “MCE Event” condition.

    a. Create a trigger for the macro by pressing the Add Trigger button and then entering a name for the trigger.



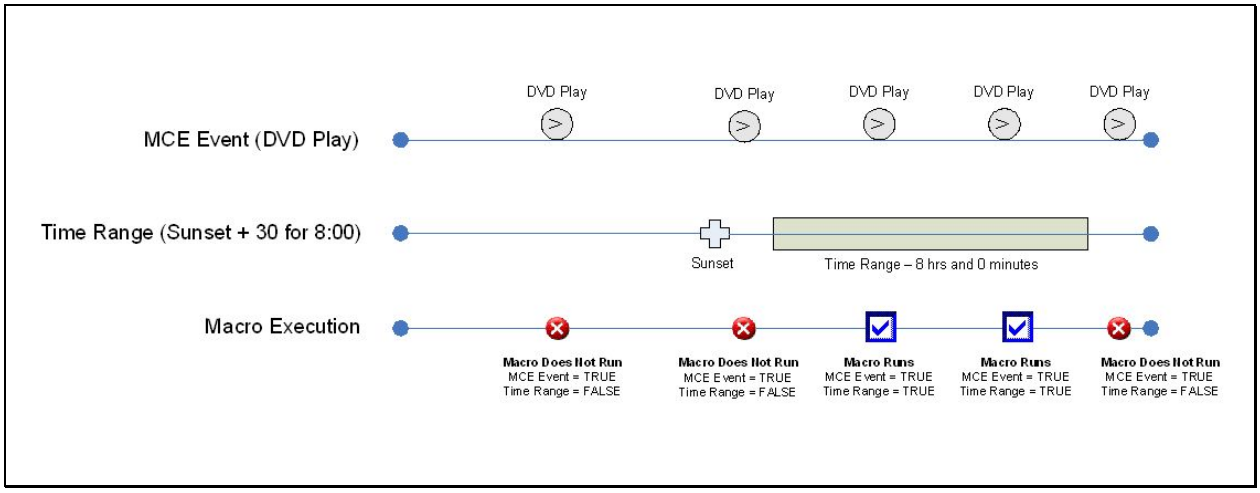
b. Once the trigger has been saved, select the trigger. Once within the trigger, press the Add Condition button to add a condition
c. Select the Condition Type to be “MCE Event”
    i. **Condition Type** – select “MCE Event”
    ii. **Media Type** – this is the media type to be triggered on
    iii. **Action** – this is the media action to be triggered on
    iv. **PC Name** – the workstation from which the type/action event is comes from. By leaving this empty, events from all PCs are considered.



3. Add another condition to the trigger to allow for the times when the trigger is valid.

    a. Select the same trigger within which the MCE Event is defined and add a new condition.

b. Define a condition to set the time range in which the trigger is valid. This will allows us to dim the lights only when it is dark – assuming that darkness is 30 minutes after sunset.
    a. **Condition Type** – select "Time Range"
    b. **Start At** – select Sunset
    c. **Offset (minutes)** – select +30 minutes
    d. **Valid Days** – select all the days
    e. **Range Hour(s)** – the number of hours for which the range is valid
    f. **Minute(s)** – the number of minutes for which the range is valid



4. Define the set of actions the macro should execute upon receiving the trigger. Use the "Add Action" button to initiate adding a set of actions for this macro.

5. The following sample shows a set of actions to take upon receipt of the MCE Event trigger. In this case, mControl will turn off the "Theater – Front" and "Theater – Back" lights.

Using External Programs within Macro Actions

Please be aware that calling external programs as part of macro actions is a security risk. By using this feature, you can enable the execution of programs at the highest privilege on the computer hosting the mControl Automation Service – including from remote computers using the mControl User Interface Client. By default this feature is disabled and by enabling it the user assumes the risk associated with this functionality.

Enable External Program Action Functionality

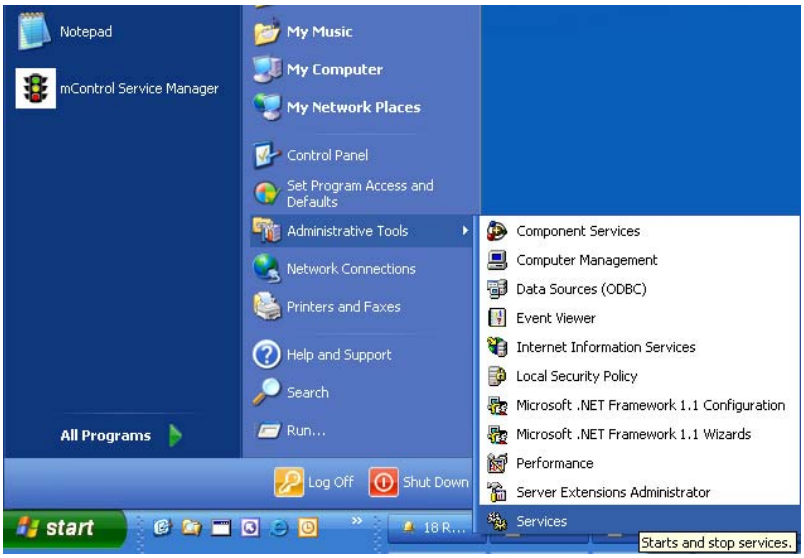
By default, the ability to call external programs as part of a macro action are disabled. To enable calling of external programs, modify the mAuServer.EnableRunAppAction parameter within the "mServer.exe.config" file, located in the "C:\Program Files\Embedded Automation\mControl\server" directory:

```
<add key="mAuServer.EnableRunAppAction" value="true"/>
```

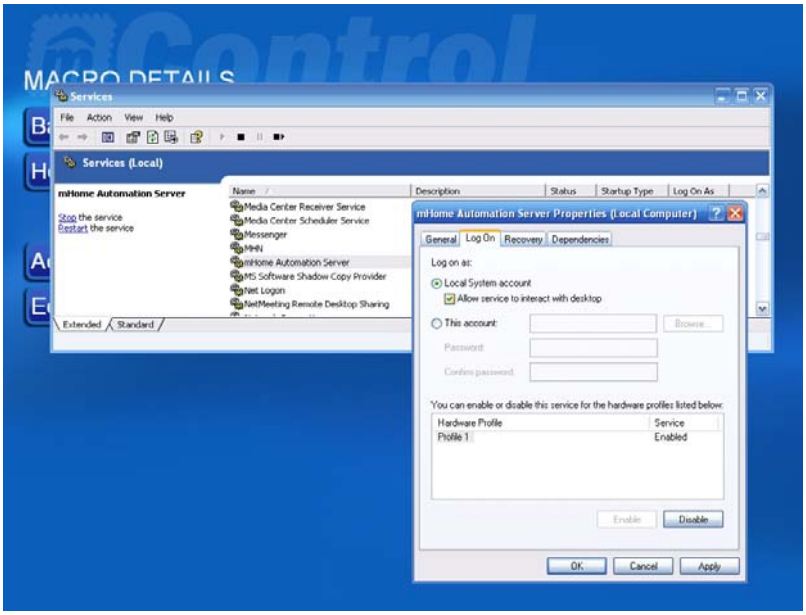
Enable Interactive Applications (GUI Apps)

If the external application is interactive (i.e. starts a GUI), you must enable desktop functionality.

Navigate to the Windows Service Manger by selecting the Start Button, then Control Panel, the Administrative Tools and finally, Services.

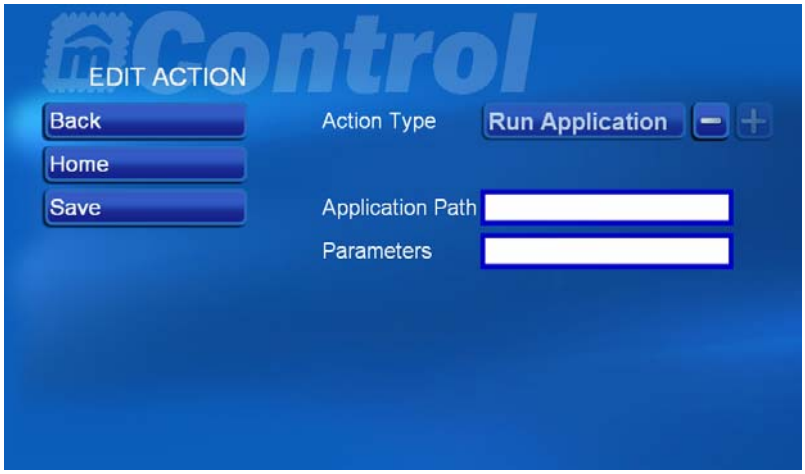


Select “mHome Automation Sever” and then use right-click to access properties for this service. Navigate to the “Log On” tab and select “Allow service to interact with Desktop”. Once enabled, restart the mControl Automation Service (mHome Automation Server).



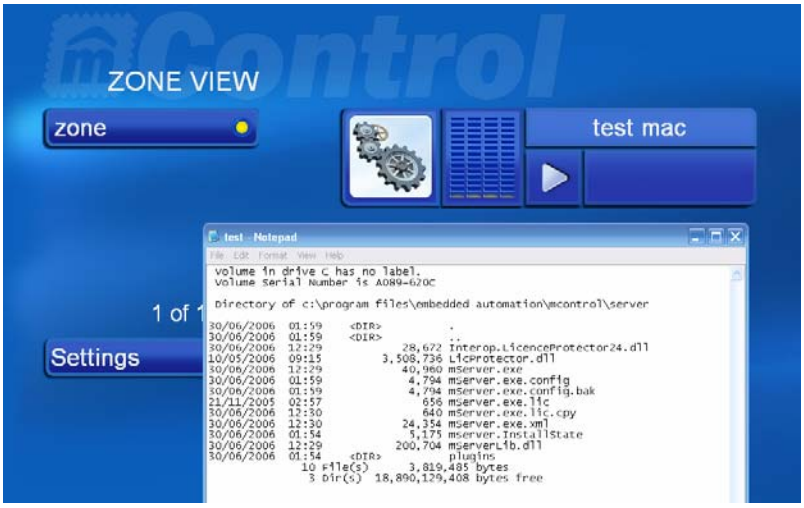
Example External Application Action

Navigate to the Add Action View and select the Action Type to Run Application:



Type in the full path name of the application in the **Application Path** text box.

In the example, Notepad will launch with the text file C:\test.txt.



Using Security Systems

Supported Security Systems

mControl supports the following security systems:

Security System	Connection Method	Supporting Documentation
Elk M1G	Serial (RS-232), IP Connection	• Elk M1 – Installation Manual
DSC PowerSeries *Platforms: PC1616, PC1832 and PC1864*	Serial (RS-232) *via DSC PC5401 Module and IT100 Module*	• DSC PowerSeries Standard Installation Guide
Honeywell ADEMCO VISTA *Platforms: VISTA-128BP and VISTA-250BP*	Serial (RS-232) *via 4100SM Serial Interface Module*	• ADEMCO VISTA Series – Installation and Setup Guide • ADEMCO VISTA Series – Programming Guide

Using Elk Security Systems

1. To enable use of the Elk Security System, navigate to the `C:\Program Files\Embedded Automation\mControl\server` directory and use a text editor to edit the `mServer.exe.xml` file. Locate the section associated with the "ELKM1" adapter and make the following changes:

- To ensure that Elk system driver is loaded, ensure that the load parameter is set to "Y". This will instruct mControl to load the driver associated with the Elk security system.
- Select the communication port using the Port parameter. "COM1" is the most common port available. Please confirm that this does not conflict with other drivers or applications.
- Select the baud rate for the communication port.

```
<adapter base="ELKM1" load="Y" assembly="EA.ELKM1.dll"
driver="EmbeddedAutomation.mServer.Adapters.ElkM1Manager">
…
        <aparam name="COMPort" value="COM1" />
        <aparam name="BAUD" value="115200" />
…
</adapter>
```

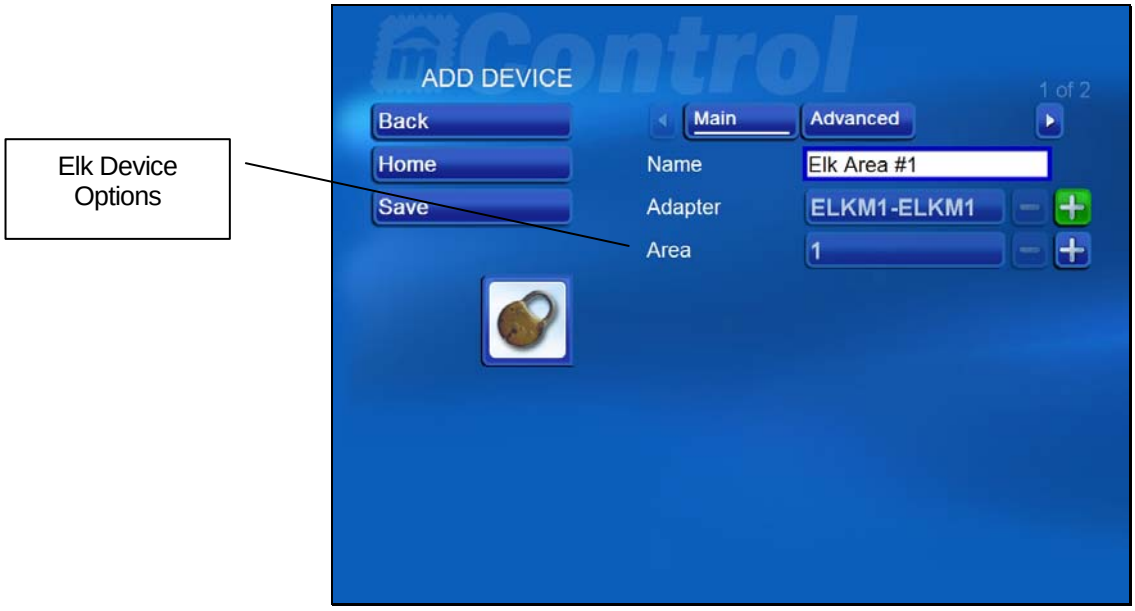
Some computers may not be able to support the default 115,200 baud rate. To adjust to a more suitable baud rate, you will have to make changes both to your Elk system and to the mControl configuration file.

For IP enabled operation, specify the IP address and IP port.

```
<adapter base="ELKM1" load="Y" assembly="EA.ELKM1.dll"
driver="EmbeddedAutomation.mServer.Adapters.ElkM1Manager">
…
        <aparam name="IPAddress" value="192.168.1.99"/>
        <aparam name="IPPort" value="2101"/>
…
</adapter>
```

Use the software provided with the ELK-M1XEP to ensure that the configuration matches that of mControl. In particular, ensure that IP Address and the ports enabled match the parameters set within the mControl.exe.xml file. Also, please ensure that your firewall allows connection to these settings.

2. Within the Edit Device page, add the Elk M1G security system.



Configure the following Elk Device Options.

- **Name** – the name of the Elk area. A different device can be added for each area.
- **Adapter** – select “ELKM1-ELKM1”
- **Area** – select an area – this corresponds to the (partitioned) areas for the Elk M1.

Once an ELKM1 device has been added, it can be viewed within the main View Zone page as a device.

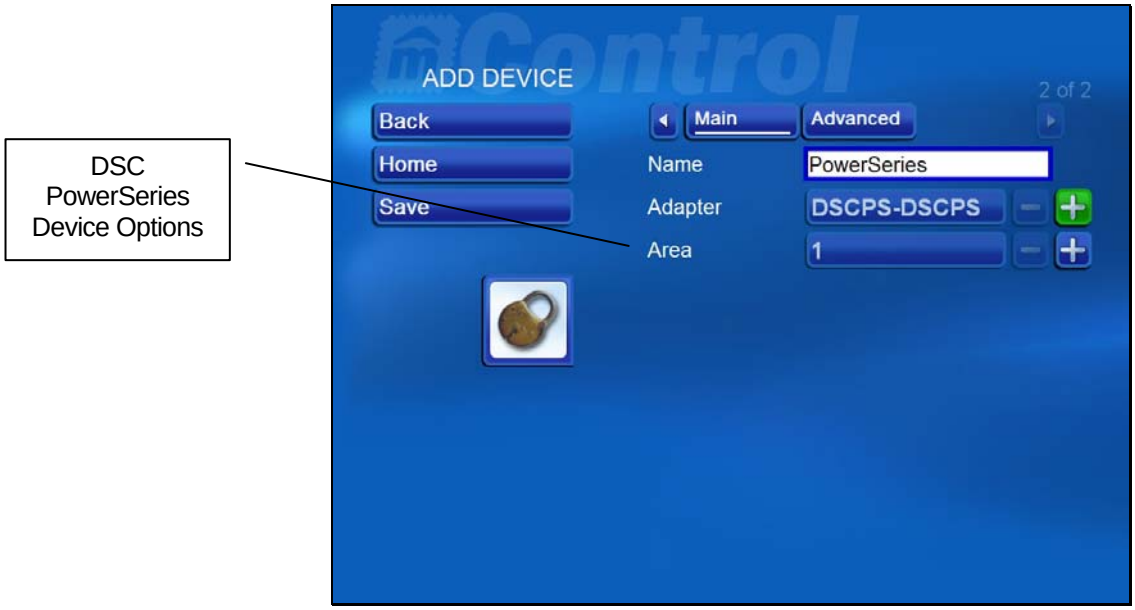
Using Digital System Control (DSC) PowerSeries Security Systems

1. To enable use of the DSC PowerSeries Security System, navigate to the `C:\Program Files\Embedded Automation\mControl\server` directory and use a text editor to edit the `mServer.exe.xml` file. Locate the section associated with the "DCSPS" adapter and make the following changes:

- To ensure that DSC PowerSeries system driver is loaded, ensure that the load parameter is set to "Y". This will instruct mControl to load the driver associated with the DSC PowerSeries security system.
- Select the communication port using the Port parameter. "COM1" is the most common port available. Please confirm that this does not conflict with other drivers or applications.
- Select the baud rate for the communication port.

```
<adapter base="DSCPS" load="Y" assembly="EA.DSCPS.dll"
 driver="EmbeddedAutomation.mServer.Adapters.DscManager">
       <aparam name="DISPLAY-AS" value="DSC PS" />
       <aparam name="Description" value="DSC PowerSeries Security
        System"/>
       <aparam name="Supports" value="DSCPS" />
       <aparam name="AProtocol" value="DSCPS" />
       <aparam name="FirstInternalDeviceId" value="-2" />
       <aparam name="DebugLevel" value="5" />
       <aparam name="COMPort" value="COM1" />
       <aparam name="BAUD" value="9600" />
       <aparam name="KeepPortOpen" value="true" />
       <aparam name="ResponseTimeout" value="2000" note="value in
        milliseconds"/>
</adapter>
```

2. Within the Edit Device page, add the DSC PowerSeries security system.



Configure the following DSC Device Options.

- **Name** – the name of the DSC area. A different device can be added for each area.
- **Adapter** – select "DSCPS-DSCPS"
- **Area** – select an area – this corresponds to partitioned areas for the DSC PowerSeries.

Once a DSC device has been added, it can be viewed within the main View Zone page as a device.

Using Honeywell ADEMCO VISTA Security Systems

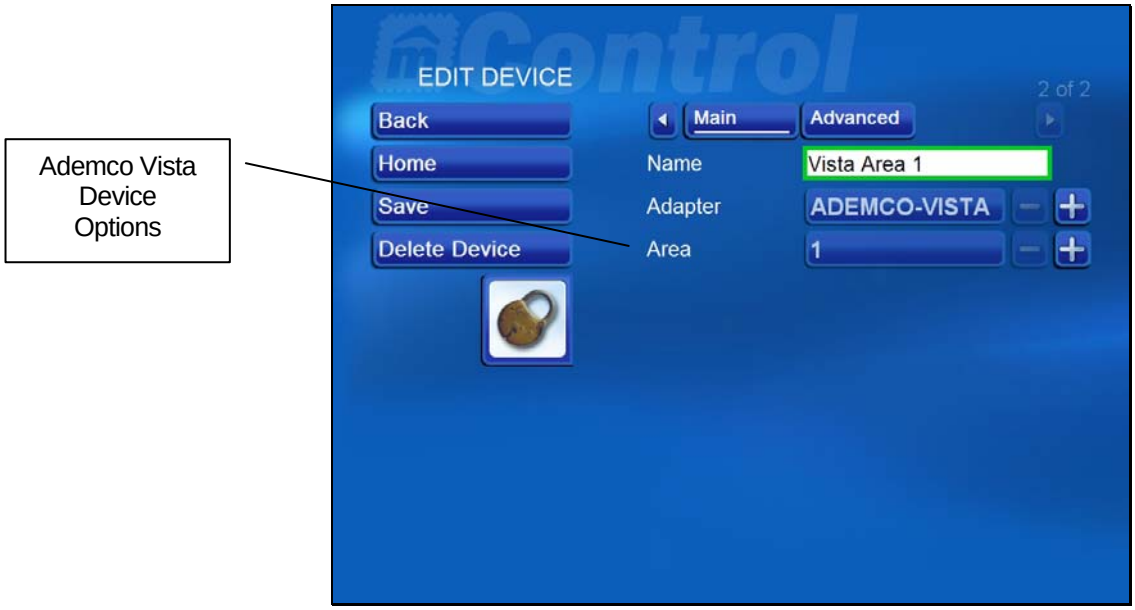
1. To enable use of the Ademco Vista Security System, navigate to the `C:\Program Files\Embedded Automation\mControl\server` directory and use a text editor to edit the `mServer.exe.xml` file. Locate the section associated with the "Ademco" adapter and make the following changes:
    - To ensure that Ademco system driver is loaded, ensure that the load parameter is set to "Y". This will instruct mControl to load the driver associated with the Ademco Vista security system.
    - Select the communication port using the Port parameter. "COM1" is the most common port available. Please confirm that this does not conflict with other drivers or applications.
    - Select the baud rate for the communication port.

```
<adapter base="ADEMCO" load="Y" assembly="EA.Ademco.dll"
driver="EmbeddedAutomation.mServer.Adapters.AdemcoManager">
        <aparam name="DISPLAY-AS" value="Ademco"/>
        <aparam name="Description" value="Honeywell Ademco Vista Security
         System"/>
        <aparam name="Supports" value="VISTA"/>
        <aparam name="AProtocol" value="VISTA"/>
        <aparam name="DebugLevel" value="5"/>
        <aparam name="COMPort" value="COM1"/>
        <aparam name="BAUD" value="1200"/>
        <aparam name="KeepPortOpen" value="true"/>
        <aparam name="ResponseTimeout" value="2000" note="value in
         milliseconds"/>
</adapter>
```

*Please note, the serial (RS-232) connection on the Ademco panel is designed to work with **partion 1 only**. If other partitions, other than partition 1, are enabled, the panel reports status and alarm information through the serial connection as follows:*

- *The Ademco panel will send zone status and alarms no matter what partition is assigned*
- *If the panel has multiple partitions and is being armed with a global code from mControl, then the panel will only arm partition 1 as long as the code is valid in partition 1.*
- *The maximum number of zones the panel supports to mControl is 96 zones. If other zones are enabled and send their information via the serial bus, they will send a zone reference of 00.*

2. Within the Edit Device page, select the ELKM1 device.



Configure the following Ademco Vista Device Options.

- **Name** – the name of the Ademco Vista area. A different device can be added for each area.
- **Adapter** – select "ADEMCO-VISTA"
- **Area** – select an area – this corresponds to partitioned areas for the Ademco Vista.

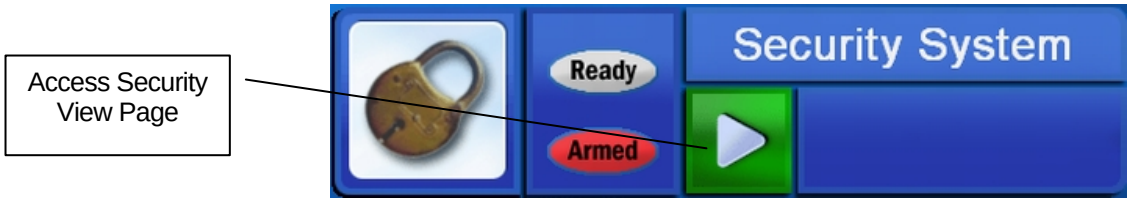
Once an Ademco Vista device has been added, it can be viewed within the main View Zone page as a device.

Understanding Security Systems Status

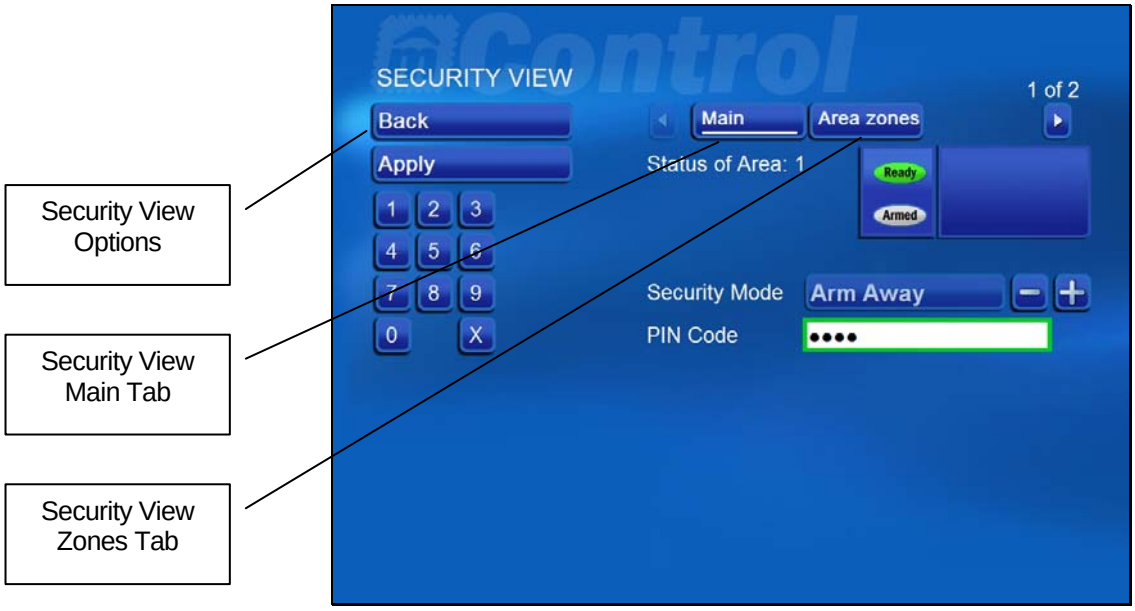
Current Settings Parameter	Graphic	Description
Ready status		System is not ready to be armed. Typically related to zone violations.
		System is ready to be armed.
Armed status		System is not armed.
		System is armed

Changing Security Systems Settings

To view detailed settings or to change settings, select the “Play” button on the device to access the Security View screen.



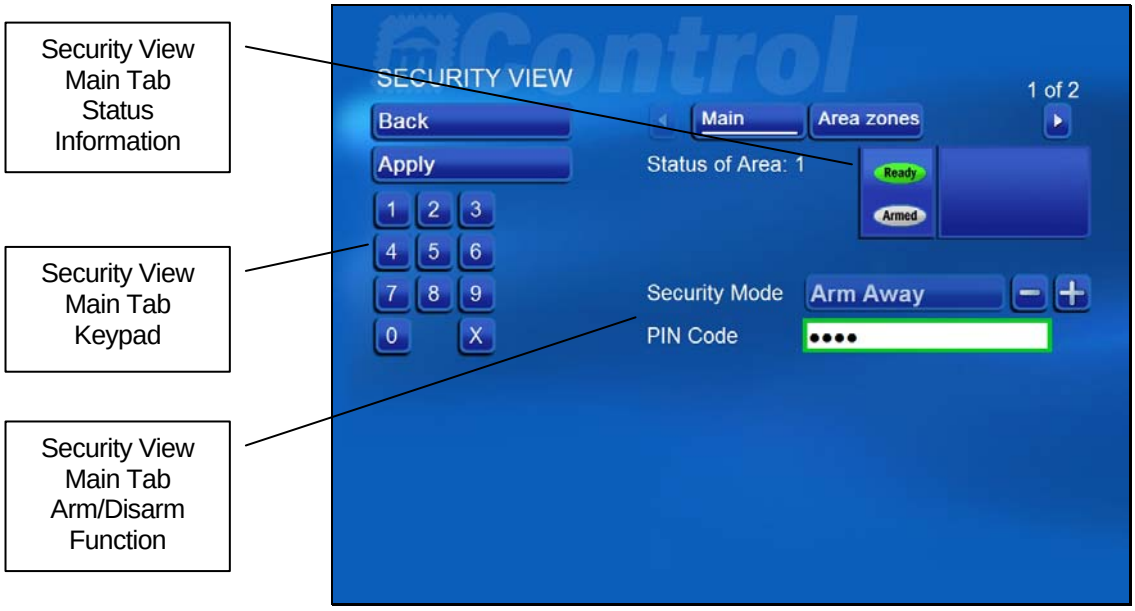
Security View Screen Overview
The Security View screen allows you to view the current status of the security system, arm/disarm the system and view zone statuses.



Security View Options
The Security View Options buttons provide the following functions:

- **Back** – goes back to the Zone View Screen
- **Apply** – applies the selected Security Mode settings

Security View Main Tab
Use the Main tab to view the current status of the system and to arm and disarm the system.



Status Information – the current status of the security system for the area indicated.

Keypad – numeric keypad to allow touch screen operation. Use the "X" key to clear the PIN Code field.

Arm/Disarm Function – select the Security Mode, enter the PIN # and press apply to change the current status of the Elk system. The following Security Modes are available:

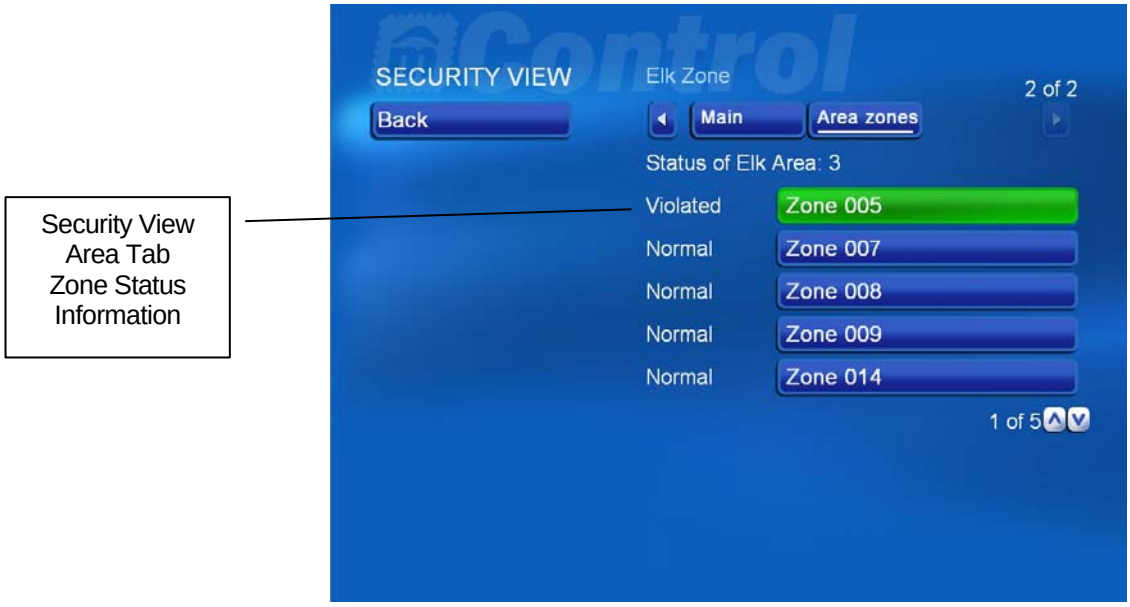
Security Mode	Description
Disarmed	System is disarmed.
Armed Away	Away mode arming is the highest arm level, intended for use when the premise is unoccupied. Both perimeter and interior zones will be armed.
Armed Stay, Armed Stay Instant, Armed to Night, Armed to Night Instant	The various stay arming modes are intended for use when the premise is occupied. All perimeter doors and windows are armed, and all interior zones are excluded.
Armed to Vacation	Vacation mode is a second level of Away mode. It can be used to activate energy saving automation features when the building will not be occupied for an extended period of time.

For more information on Security Modes, please refer to the security system's user manual.

For Ademco Vista systems, the PIN Code will need to be prefixed with the last two digits of the user code. For example if the user code is "002" and the PIN Code is "1234", the entry within the PIN Code field will need to be "021234".

Security Zones Tab

Use the Security Zones tab to view the current status of the zones defined in the system.



Zone Status Information – the current status each zone defined within the area is shown.

Triggering Macros using Security System Events

Security system events can be used to trigger mControl macros. To do this, add an mControl macro trigger, select the “Device Change” condition and reference the security system event to be used for the trigger.

Using Irrigation Controllers

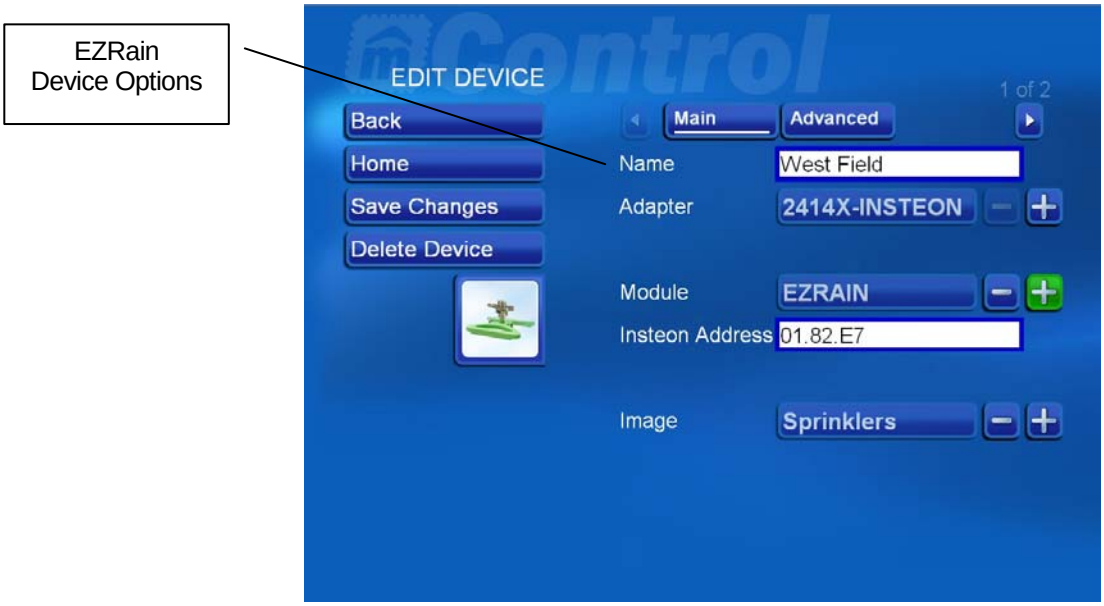
Irrigation Controllers

mControl supports the following irrigation controllers:

Irrigation Controllers	Connection Method	Comments
EZRain V1	INSTEON protocol	Please refer to the EZRain V1 data sheet for additional information.

EZ Rain V1 Irrigation Controllers

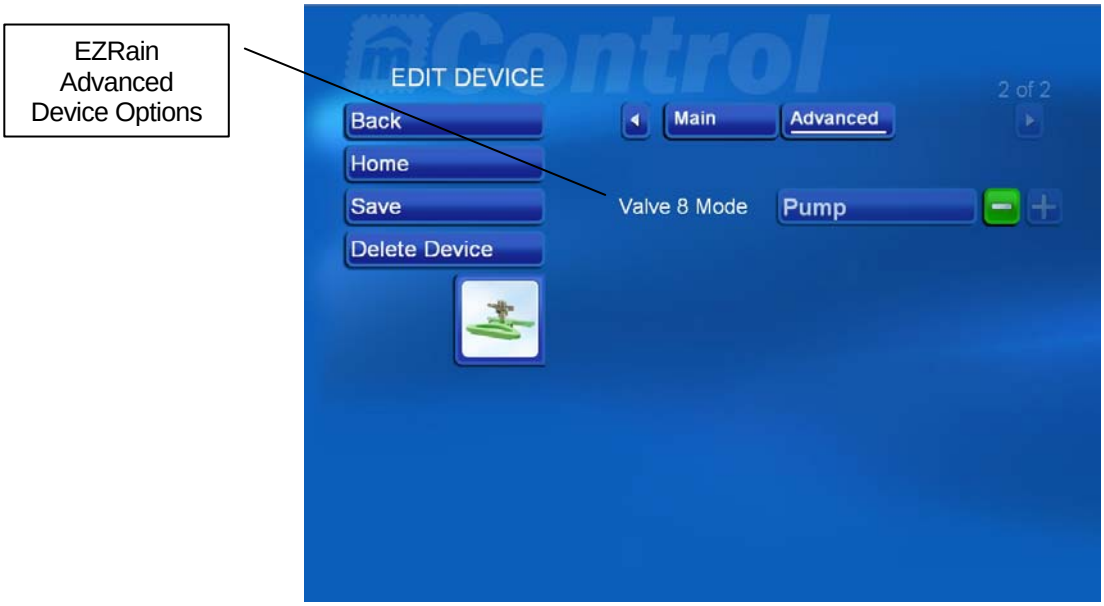
Add an EZRain Irrigation Controller to mControl
Within the Edit Device page, select the EZRAIN device.



From the Main tab area configure the following EZRain Device Options.

- **Name** – the name of the EZRain irrigation controller
- **Adapter** – the INSTEON adapter to use to communicate with the EZRain irrigation controller
- **INSTEON Address** – the INSTEON address of the EZRain irrigation controller
- **Image** – the image to use with this EZRain irrigation controller

By selecting the Advanced tab, additional configuration items can be set.

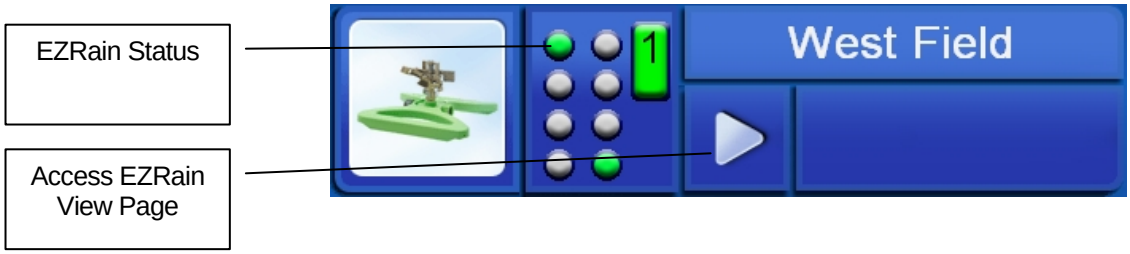


Configure the following EZRain Advanced Device Options.

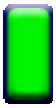
- **Valve 8 Mode** – use this setting to determine how valve 8 will be used. The following modes are available:

Valve 8 Mode	Description
Normal	Valve 8 operates the same as all other valves.
Pump	Valve 8 is turned ON when another valve is ON. This allows the valve 8 to enable a pump that may be used in conjunction with the other valves.

Once an EZRain device has been added, it can be viewed within the main View Zone page as a device.



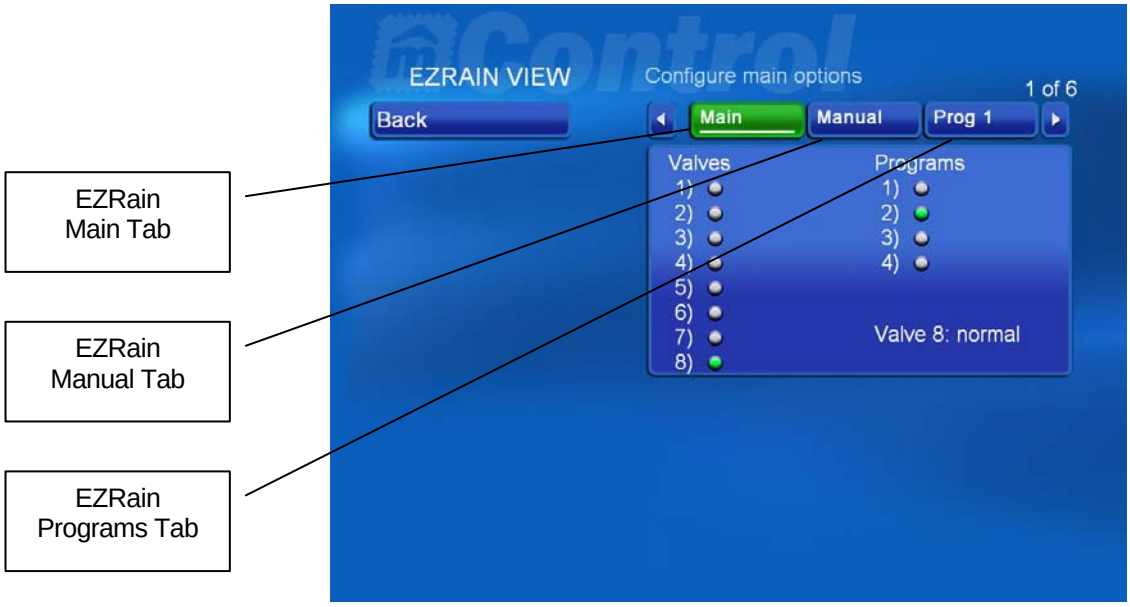
Each EZRain device will provide the following status indicators:

Indicator	Active (ON)	Inactive
Valve 1-8		
Program 1-4	 Active program is shown	No program image is shown

To view detailed settings or to change settings, select the “Play” button on the device to access the EZRain View screen. The EZRain View screen allows you to view the detailed current status of the security system and make changes to these settings.

Changing or Viewing EZRain Settings

Use the EZRain View page to get the current status of the EZRain device, manually control valves, create program settings and manually run programs.

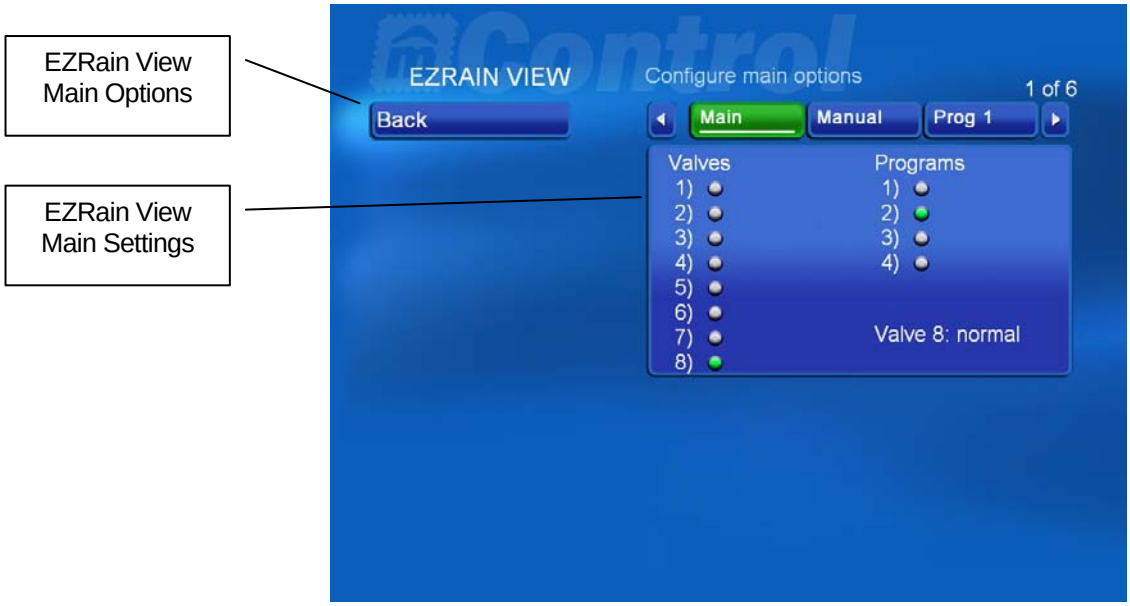


From the EZView View use the following tabs to view, configure and control the following EZRain Device Options.

- **Main** – view the current status of the EZRain device
- **Manual** – manually control the EZRain device
- **Prog 1 ... Prog 4** – configure and launch EZRain programs

Main Tab

Use the Main tab to view the current status of your EZRain device.



The following EZRain View Main Options are available:

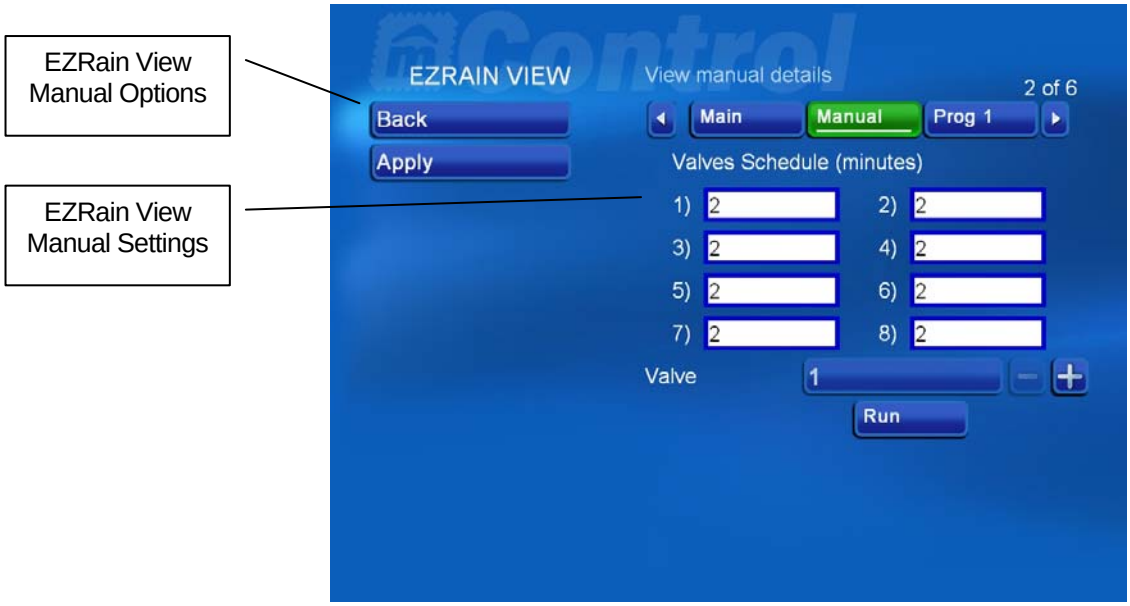
- **Back** – return to the View Zone page

The following real-time status information is provided:

- **Valves** – status of each valve
- **Programs** – status of programs
- **Valve 8 Mode** – the type of mode for Valve 8

Manual Tab

Use the Manual tab to view the current status of your EZRain device.



The following EZRain View Manual Options are available:

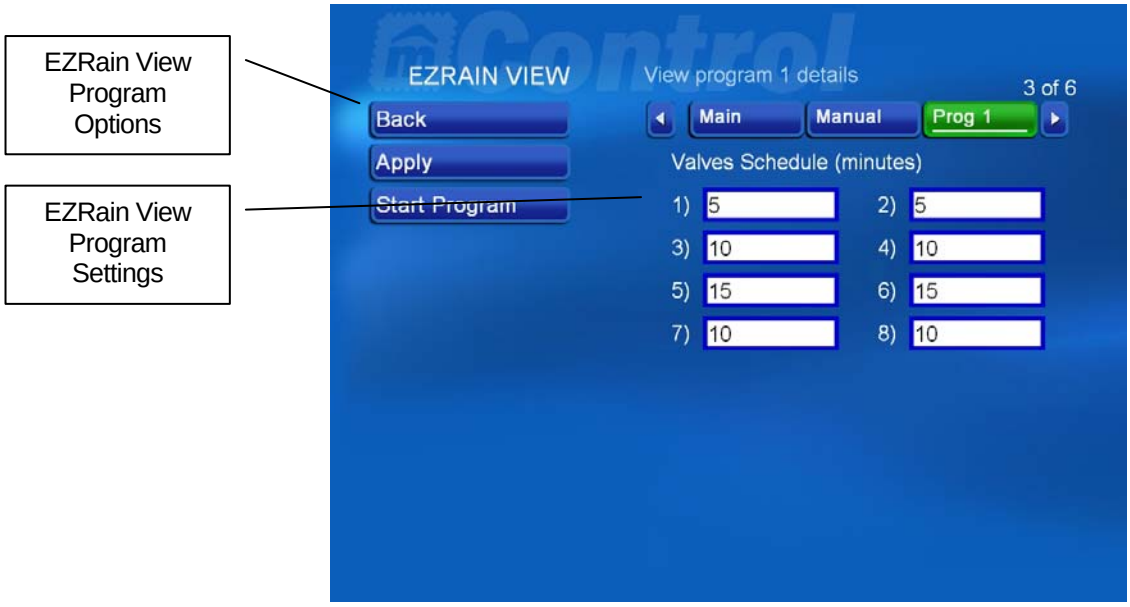
- **Back** – return to the View Zone page
- **Apply** – commit the entered Valve Schedule settings to the EZRain Irrigation Controller

The following EZRain View Manual Settings are available:

- **Valve Schedule** – the time in minutes for each valve to operate
- **Valve** – the valve to operate
- **Run/Stop** – manual control of the Valve specified

Program Tab

Use the Program tab to view the current status of your EZRain device.



The following EZRain View Program Options are available:

- **Back** – return to the View Zone page
- **Apply** – commit the entered Valve Schedule settings for the selected Program to the EZRain Irrigation Controller
- **Start/Stop Program** – initiate or stop the selected Program

The following EZRain View Program Settings are available:

- **Valve Schedule** – the time in minutes for each valve to operate for the selected Program

Using Thermostats

Using HAI Thermostats

1. To enable HAI thermostat support within mControl, edit mControl configuration settings in the "mServer.exe.xml" located in the C:\Program Files\Embedded Automation\mControl\server directory.

   Open the "mServer.exe.xml" file using Notepad or equivalent text editor, find the section which has configuration settings for the HAI thermostat and make the following highlighted changes to load the HAI thermostat driver into mControl – ensure that the load parameter for the adapter is "Y" and the parameters for COM port and baud rate are correct:

```
<adapter base="HAIRC" load="Y" assembly="EA.HAIRCTHERMO.dll"
   driver="EmbeddedAutomation.mServer.Adapters.HaiRcsThermoManager">
        <aparam name="DISPLAY-AS" value="HAI RC Thermo" />
        <aparam name="Description" value="HAI RC-Serial Thermostat" />
        <aparam name="Supports" value="HAIRC" />
        <aparam name="AProtocol" value="HAIRC" />
        <aparam name="DebugLevel" value="9" />
        <aparam name="COMPort" value="COM1" persistent="false" />
        <aparam name="BAUD" value="300" persistent="false" />
        <aparam name="KeepPortOpen" value="true" />
        <aparam name="ResponseTimeout" value="1250" note="value in
         milliseconds" />
</adapter>
```

Please ensure that the selected COM port does not conflict with other adapters using the same port and within the mServer.exe.xml file. To enable any changes in adapter XML settings, you must restart the mControl Automation Service, which during initialization reads the XML files.

2. Add the HAI Thermostat using the Add/Edit Device page.
   - **Name** – Provide a name for the thermostat
   - **Adapter** – Select "HAIRC-HAIRC" to select HAI Omnistat RC series thermostat
   - **Module** – By default, the module will be "HAIRCTHERMO"
   - **RC Address** – Specify the address of the HAI Omnistat RC series thermostat. Refer to the HAI Omnistat RC thermostat manual to determine addressing for your thermostat – mControl does not have any limit on the amount of thermostats allowed.

3. Once the thermostat device is saved, current settings will be read from the HVAC control unit. This process can take several seconds.

Using Proliphix Thermostats

1. To enable Proliphix thermostat support within mControl, edit mControl configuration settings in the “mServer.exe.xml” located in the C:\Program Files\Embedded Automation\mControl\server directory.

   Open the “mServer.exe.xml” file using Notepad or equivalent text editor, find the section which has configuration settings for the HAI thermostat and make the following highlighted changes to load the HAI thermostat driver into mControl – ensure that the load parameter for the adapter is “Y” and the parameters for COM port and baud rate are correct:

```
<adapter base="PROLIPHIX" load="Y" assembly="EA.PROLIPHIX.dll"
 driver="EmbeddedAutomation.mServer.Adapters.ProliphixThermoManager">
       <aparam name="DISPLAY-AS" value="ProliphixNT Thermo" />
       <aparam name="Description" value="PROLIPHIX NT-series Thermostat"/>
       <aparam name="Supports" value="PROLIPHIX" />
       <aparam name="AProtocol" value="PROLIPHIX" />
       <aparam name="DebugLevel" value="5" />
       <aparam name="ResponseTimeout" value="45" note="value in seconds"/>
       <aparam name="PollingSeconds" value="120" note="Allowed range:
        {60-3600}sec. default=120" />
</adapter>
```

2. Add the Proliphix Thermostat using the Add/Edit Device page.
   - **Name** – Provide a name for the thermostat
   - **Adapter** – Select “PROLIPHIX” to select Proliphix series thermostat
   - **Module** – By default, the module will be “Proliphix”
   - **Address** – Specify the IP address of the Proliphix series thermostat. By default, mControl assumes port=80, user=admin and password=admin

3. Once the thermostat device is saved, current settings will be read from the HVAC control unit. This process can take several seconds.

Using RCS Thermostats

mControl supports two versions of RCS thermostats:

Thermostat Module	Required Adapter	Comments
TXB16 (X10)	CM11A X10 Adapter or PowerLinc 2414x/2814x Adapter	Only these adapters have sufficient functionality to send/receive commands to/from the TXB16 thermostat. An X10 House code must also be selected. Please refer to the TXB16 Thermostat User Manual for detailed instructions.
ZWTHERMO for TZ16 and other Z-Wave compatible thermostats	Z-Wave Adapters	Generic Z-Wave adapter can be selected. If the thermostat device is not already within the adapter, you may have to enroll it. For more information on enrollment, please refer to the Z-Wave section of this manual. Please refer to the TZ16 Thermostat and/or other Z-Wave thermostat User Manual for detailed instructions

Using RCS TXB16 Thermostats

1. To enable RCS TXB16 thermostat support within mControl, edit mControl configuration settings in the “mServer.exe.xml” located in the C:\Program Files\Embedded Automation\mControl\server directory.

   For RCS TXB16 thermostats, ensure that either the CM11A X10 Adapter or the PowerLinc 2414x/2814x INSTEON Adapter are enabled.

   Open the “mServer.exe.xml” file using Notepad or equivalent text editor, find the section which has configuration settings for the either the CM11A or PowerLinc adapters and make the following highlighted changes to load the adapter into mControl – ensure that the load parameter for the adapter is “Y” and the parameters for COM port are correct:

```
<adapter base="CM11A" load="Y" assembly="EA.InsteonX10.dll"
 driver="EmbeddedAutomation.mServer.Adapters.CM11AManager">
       <aparam name="DISPLAY-AS" value="CM11A" />
       <aparam name="Description" value="ActiveHome X10 Serial Adapter" />
       <aparam name="Supports" value="X10|X10PDIM|X10EXT" />
       <aparam name="AProtocol" value="X10" />
       <aparam name="Port" value="COM1" persistent="false" />
       <aparam name="KeepPortOpen" value="true" />
       <aparam name="ResponseTimeout" value="2500" />
       <aparam name="X10ThermoRqWait" value="3500" />
       <aparam name="DebugLevel" value="5" />
</adapter>
```

To enable any changes in adapter XML settings, you must restart the mControl Automation Service, which during initialization reads the XML files.

2. Add the RCS TXB16 thermostat using the Add/Edit Device page.
    - **Name** – Provide a name for the thermostat
    - **Adapter** – Select “CM11A-X10” or “2414X-INSTEON” adapter
    - **Module** – Select “TXB16”
    - **House** – Specify the X10 house address for the RCS TXB16 thermostat

Embedded Automation recommends the CM11A X10 adapter for use with RCS TXB16 (X10).

For the TXB16 (X10), once the house code has been selected, no other devices should use that house code to ensure proper communication between mControl and the thermostat.

3. Once the thermostat device is saved, current settings will be read from the HVAC control unit. This process can take minutes.

Using RCS TZ16 Thermostats

1. To enable RCS TZ16 thermostat support within mControl, edit mControl configuration settings in the "mServer.exe.xml" located in the C:\Program Files\Embedded Automation\mControl\server directory.

   Open the "mServer.exe.xml" file using Notepad or equivalent text editor, find the section which has configuration settings for the Z-Wave adapter and make the following highlighted changes to load the adapter into mControl – ensure that the load parameter for the adapter is "Y":

```
<adapter base="ZWCTRL" load="Y" assembly="EA.ZWAVE.dll"
 driver="EmbeddedAutomation.mServer.Adapters.ZWaveManager">
       <aparam name="DISPLAY-AS" value="Z-Wave Controller" />
       <aparam name="Description" value="Z-Wave USB Controller" />
       <aparam name="Supports" value="ZWAVE" />
       <aparam name="AProtocol" value="ZWAVE" />
       <aparam name="Port" value="USB" persistent="false" />
       <aparam name="DebugLevel" value="5" />
       <aparam name="PollingSeconds" value="10" note="zero means no
        polling. Allowed range: {0-3600} sec. default=10" />
</adapter>
```

To enable any changes in adapter XML settings, you must restart the mControl Automation Service, which during initialization reads the XML files.

2. Add the RCS TZ16 thermostat using the Add/Edit Device page.
   - **Name** – Provide a name for the thermostat
   - **Adapter** – Select "ZWCTRL-ZWAVE" adapter
   - **Module** – Will default to "ZWave Thermostat"
   - **Z-Wave ID** – the selected Z-Wave ID for the RCS TZ16 thermosta

3. Once the thermostat device is saved, current settings will be read from the HVAC control unit. This process can take minutes. For Z-Wave thermostats, the rate at which the data from the thermostat is read will depend on the Z-Wave polling settings.

Understanding Thermostat Status

Current Settings Parameter	Graphic	Description
Current temperature	XX	Current temperature value in C or F.
Current mode of operation		For X10 thermostats, this icon will be shown in Automatic mode For Z-Wave thermostats, the icon representing the actual mode of operation will be shown: Heat, Cool or Off.
		Heat mode For Z-Wave thermostats, if the thermostat is in Auto mode, but currently heating, this icon will be shown
		Cool mode For Z-Wave thermostats, if the thermostat is in Auto mode, but currently cooling, this icon will be shown
		Off mode For Z-Wave thermostats, if the thermostat is in Auto mode, but currently idle, this icon will be shown
Current fan setting		For X10 thermostats, this icon will be shown if the fan is in Automatic mode For Z-Wave thermostats, the icon representing the actual mode of fan operation will be shown: On or Auto.
		Fan ON mode For Z-Wave thermostats, if the fan is in Auto mode, and currently On, this mode will be shown
		Fan OFF For Z-Wave thermostats, if the fan is in Auto mode, but currently idle, this mode will be shown
Current Set Points		For Cool or Auto mode, cooling begins 1 degree above this temperature
		For Heat or Auto mode, heating begins 1 degree below this temperature

Changing Thermostat Settings

To view detailed settings or to change settings, select the “Play” button on the device to access the HVAC View screen.

The HVAC View screen allows you to view the detailed current settings of the thermostat device and make changes to these settings.

Current HVAC Settings are based on the real-time status of the thermostat.

Editable HVAC Settings:

- **Mode** – mode of operation for the thermostat
- **Fan** – mode of operation for the fan
- **Setpoints** – heat or cool set points

Changes to the Editable HVAC Settings will only be applied after pressing the “Apply” button. Changes can take several seconds to be applied within the HVAC Control Unit and up to several minutes to update on the device.

Adjusting HVAC Settings in Macros

Thermostat settings can be adjusted within mControl macros. To do this, add an mControl macro action, select the “Device” Action Type and reference the thermostat to be adjusted. Select the parameters to be applied once the action is executed.

Using Cameras

Viewing Cameras on mControl Clients

Live camera viewing and recording is available on all mControl clients.

The following table provides a summary of capabilities and requirements for viewing cameras on the various mControl clients:

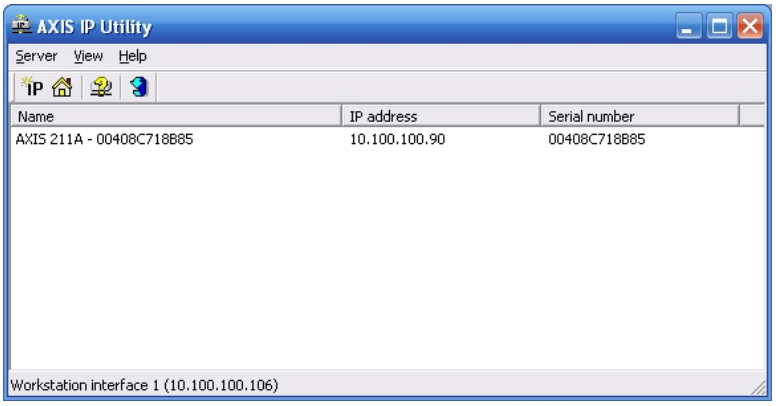
mControl Client	Option	Comments
mControl for IE, mControl for MCE 2005, MCE 2005 extenders	JPG View enabled	• Provides live stream (appx. 0.5fps) • Requires entry of camera's User Name and Password • Recommended solution for custom cameras, where ActiveX information is not available
mControl for IE, mControl for MCE 2005, MCE 2005 extenders	JPG View disabled (ActiveX Mode)	• Provides live stream (speed of stream is largely based on camera's capabilities but usually 5 to 30fps) • Some ActiveX components may also provide live audio and other camera functionality (e.g., Pan, Tilt, Zoom, Home) • ActiveX components must be pre-loaded using IE to be used within MCE 2005 • Entry and departure from a zone can be delayed due to loading and unloading, respectively, of ActiveX components for a camera ***Known Issues:*** • *ActiveX objects can take time to load and may require additional memory. It is not recommended to use many ActiveX cameras simultaneously.* • *Some Panasonic cameras, because of the implementation of their ActiveX component, will require User Name/Password entry.* • *Some Panasonic cameras, because of the implementation of their ActiveX component, may not position the camera image properly within the frame which mControl provides to show the camera image*
mControl for Vista Media Center, Vista Media Center extenders	N/A	• Provides live stream (speed of stream is largely based on camera's capabilities but usually 5 to 30fps)

mControl Client	Option	Comments
mControl Editor	N/A	• Provides live stream (speed of stream is largely based on camera's capabilities but usually 5 to 30fps)
mControl for Windows Mobile	N/A	• Provides live snapshot – use "Refresh" button to retrieve new live snapshot • Requires entry of camera's User Name and Password

Using Axis Cameras

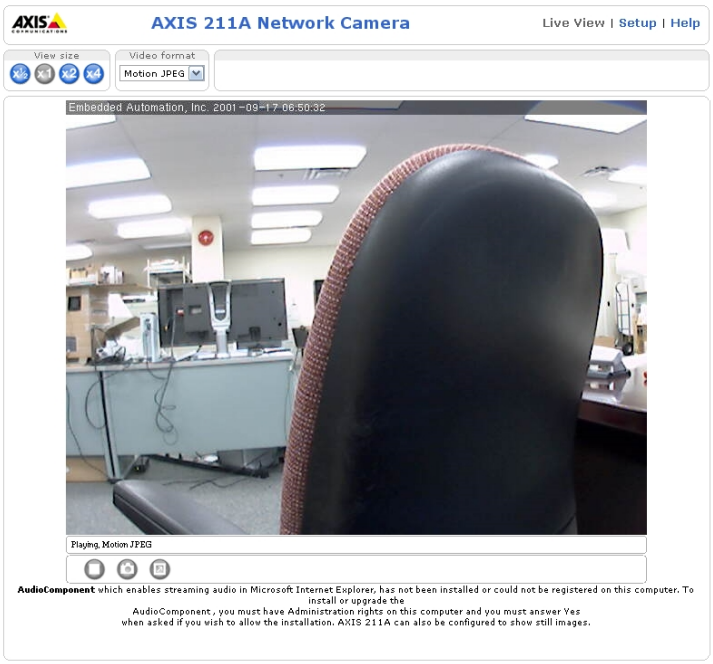
1. Follow the instructions provided with your Axis camera to complete the hardware set-up, including establishing the wired or wireless network and connecting power.

2. Use the Axis IP Utility to find the available cameras. ***Please note the IP Address here for future use – mControl requires this information.***

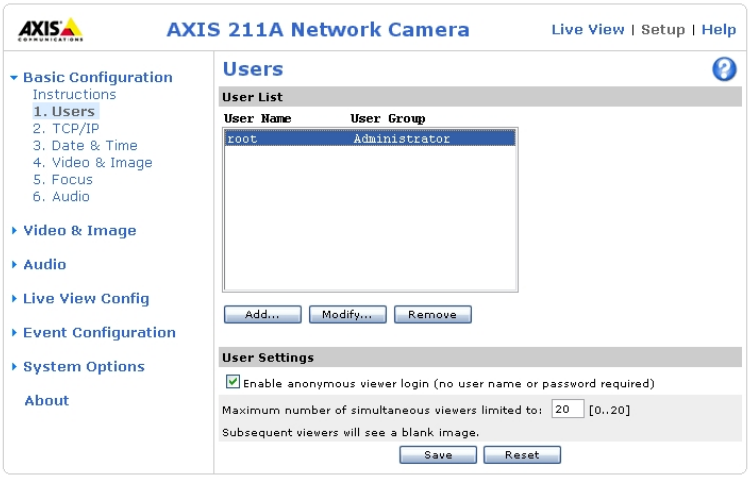


3. Double-click to access the camera.

Upon entering this screen for the first time, the Axis software automatically loads a MPEG4 ActiveX component which allows you to view the camera. This procedure must be followed to load the ActiveX object on each client machine you wish to view the camera.


AXIS 211A Network Camera
Live View | Setup | Help
View size
Video format
Motion JPEG
Embedded Automation, Inc. 2001-09-17 06:50:32
Playing, Motion JPEG
AudioComponent which enables streaming audio in Microsoft Internet Explorer, has not been installed or could not be registered on this computer. To install or upgrade the
AudioComponent, you must have Administration rights on this computer and you must answer Yes
when asked if you wish to allow the installation. AXIS 211A can also be configured to show still images.

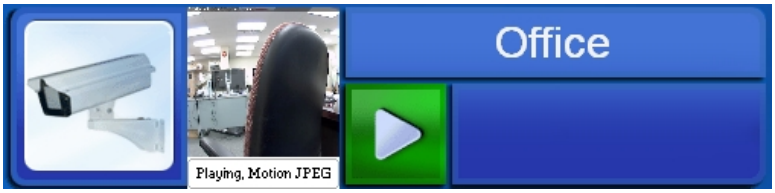
4. Navigate to the “Setup” section, then select the “User” option. For security reasons, you may create an mControl user by assigning a Username/Password. ***Please note the Username/Password here for future use – mControl requires this information.***



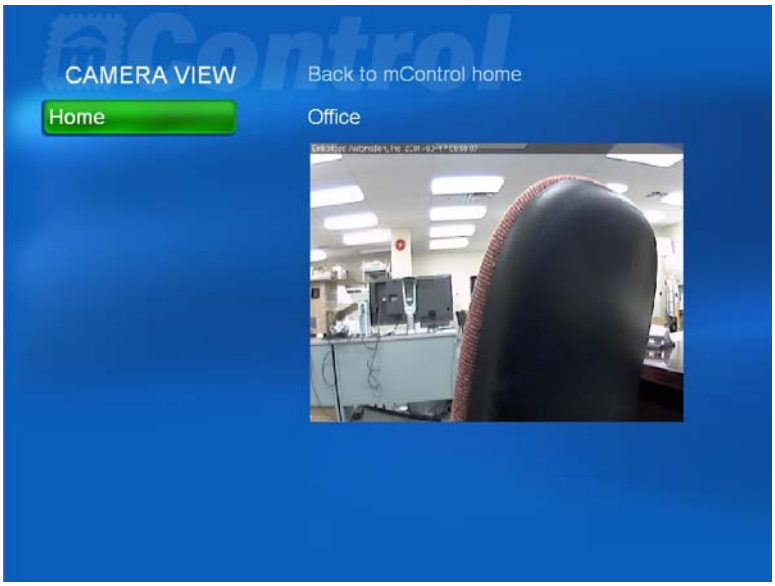
5. Once completed, you may have to re-power (or reset) your camera.

6. Now you are ready to add the camera to mControl software.
    a. Navigate to the “Settings” page
    b. Select the “Camera” option
    c. Select the “Add Camera” option
    d. Enter the information required to connect to the camera, including:
        - **Name** – the name of the camera (for example, “Back Porch”)
        - **Zone** – the zone that the camera should be displayed within
        - **Model** – the camera model
        - **IP Address** – as per step #2 of this process, enter the IP or host.domain.com address.
        - **Port** – HTTP port number assigned for the camera
        - **Username** – as per step #4, enter the Username
        - **Password** – as per step #4, enter the Password
    e. “Save Changes” and return

7. View the camera from the “Zone View” screen



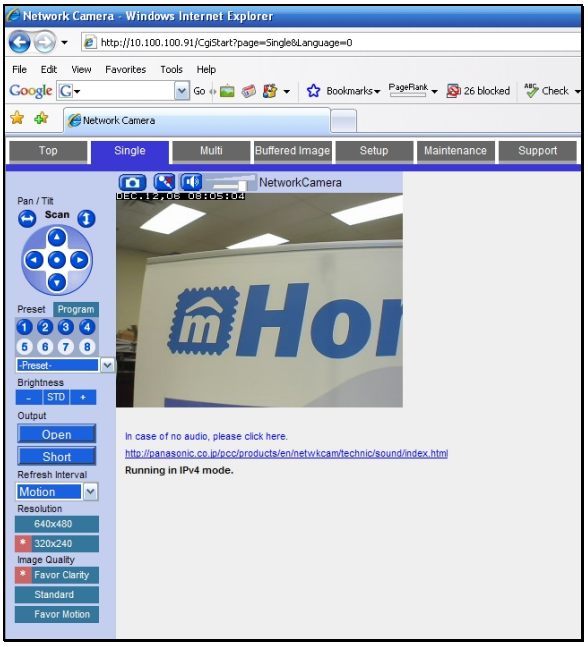
8. Navigate to the “Play” button on the camera device. If you press OK, a full-screen will be displayed.

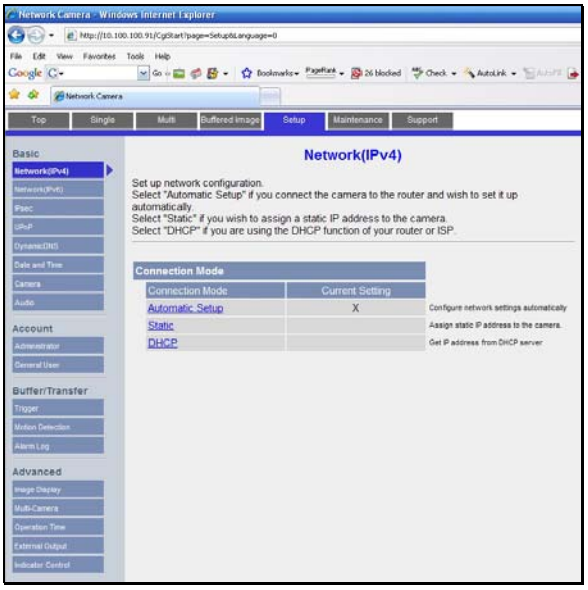


Using Panasonic Cameras

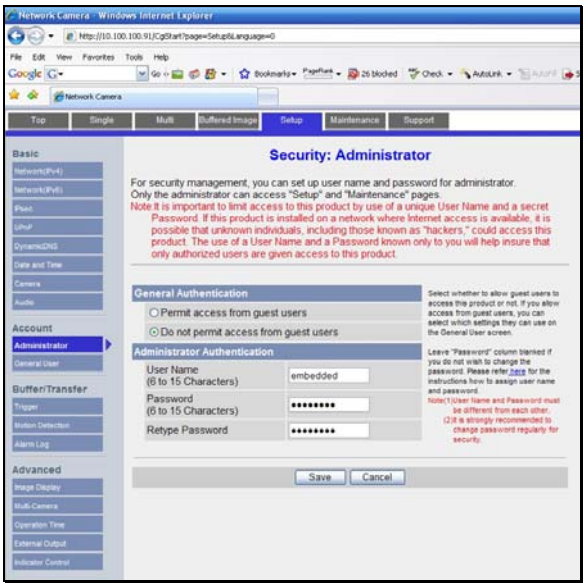
1. Follow the instructions provided with your Panasonic camera to complete the hardware set-up, including establishing the wired or wireless network and connecting power.

2. Access the Panasonic camera and use the “Setup” tab to configure the network settings. ***Please note the IP Address for future use – mControl requires this information.***




Network(IPv4)
Set up network configuration.
Select "Automatic Setup" if you connect the camera to the router and wish to set it up automatically.
Select "Static" if you wish to assign a static IP address to the camera.
Select "DHCP" if you are using the DHCP function of your router or ISP.
Connection Mode
Connection Mode
Current Setting
Automatic Setup
X
Static
DHCP

3. Navigate to the “Administrator” section under the “Setup” tab. For security reasons, you may create an mControl user by assigning a Username/Password. ***Please note the Username/Password here for future use – mControl requires this information.***

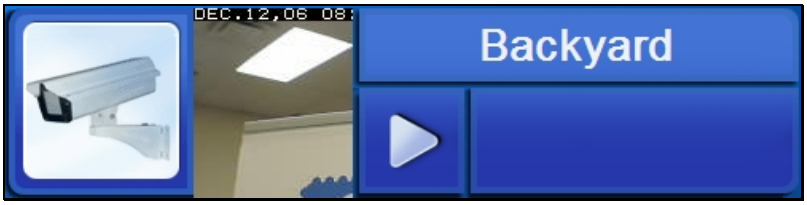

Network Camera - Windows Internet Explorer
Top
Single
Multi
Buffered Image
Setup
Maintenance
Support
Basic
Account
Administrator
General User
Buffer/Transfer
Advanced
Security: Administrator
For security management, you can set up user name and password for administrator.
Only the administrator can access "Setup" and "Maintenance" pages.
Note It is important to limit access to this product by use of a unique User Name and a secret Password. If this product is installed on a network where Internet access is available, it is possible that unknown individuals, including those known as "hackers," could access this product. The use of a User Name and a Password known only to you will help insure that only authorized users are given access to this product.
General Authentication
Permit access from guest users
Do not permit access from guest users
Administrator Authentication
User Name (6 to 15 Characters)
embedded
Password (6 to 15 Characters)
Retype Password
Save
Cancel

4. Once completed, you may have to re-power (or reset) your camera.

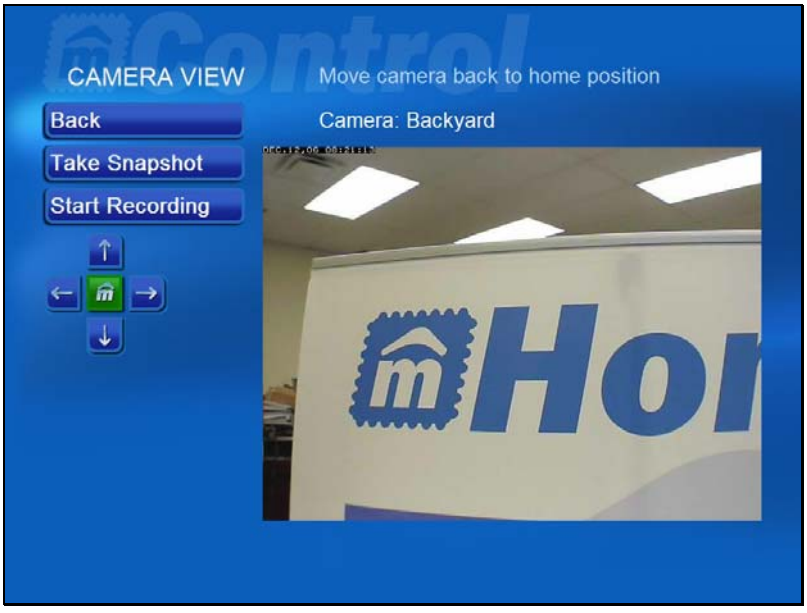
5. Now you are ready to add the camera to mControl software.
    a. Navigate to the “Settings” page
    b. Select the “Camera” option
    c. Select the “Add Camera” option
    d. Enter the information required to connect to the camera, including:
        - **Name** – the name of the camera (for example, “Back Porch”)
        - **Zone** – the zone that the camera should be displayed within
        - **Model** – the camera model
        - **IP Address** – as per step #2 of this process, enter the IP or host.domain.com address.
        - **Port** – HTTP port number assigned for the camera
        - **Username** – as per step #3, enter the Username
        - **Password** – as per step #3, enter the Password
    e. “Save Changes” and return

6. View the camera from the “Zone View” screen. On the initial view, you may be asked for user name and password.

The camera will be displayed as a device.



7. Navigate to the “Play” button on the camera device. If you press OK, a full-screen will be displayed.



Using D-Link Cameras

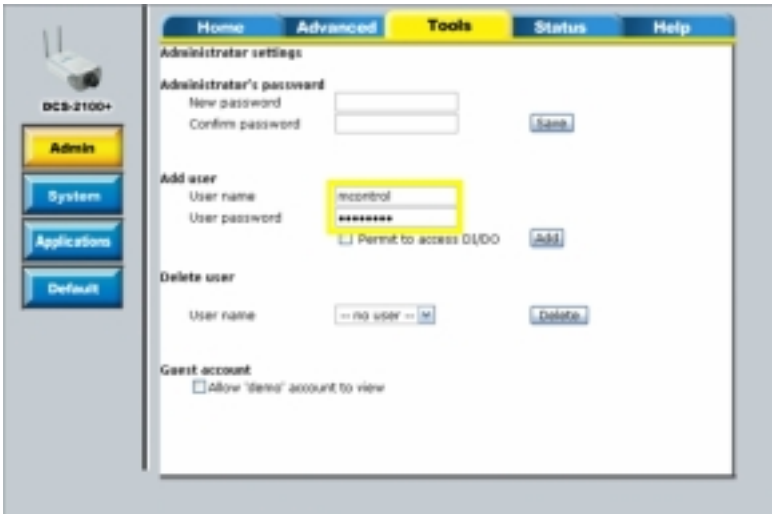
1. Follow the instructions provided with your D-Link camera to complete the hardware set-up, including establishing the wired or wireless network and connecting power.

2. Use the D-Link software's IP Installer option to find the available cameras. Click on the "Link" button to configure for mControl. ***Please note the IP Address here for future use – mControl requires this information.***

3. Once linked, select the “Configuration” option of the camera.

Once you enter this screen, the D-Link software automatically loads a MPEG4 ActiveX component which allows you to view the camera. This procedure must be followed to load the ActiveX object on each client machine you wish to view the camera.

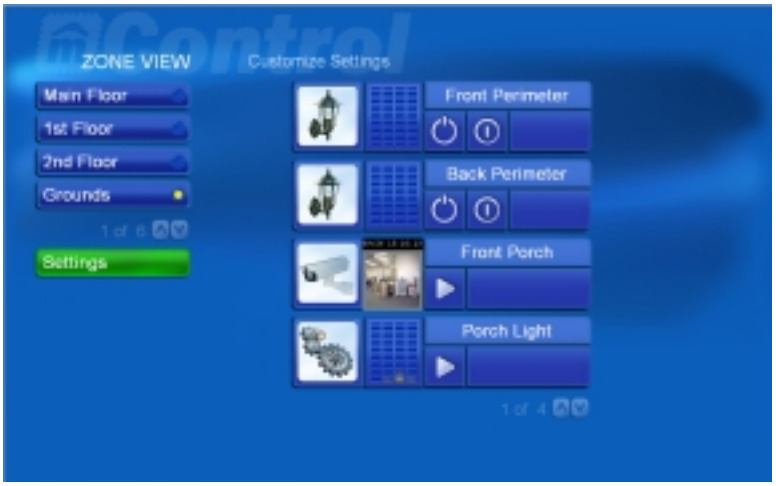
4. Navigate to the “Tools” tab, then select the “Admin” option. For security reasons, you may create an mControl user by assigning a Username/Password. ***Please note the Username/Password here for future use – mControl requires this information.***



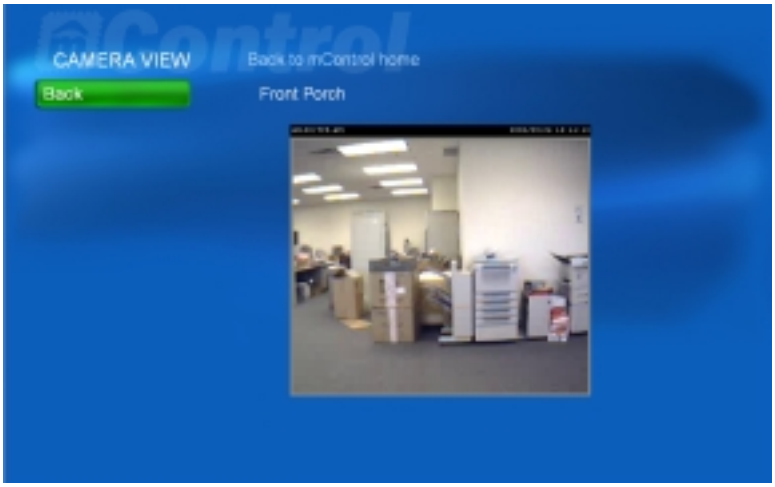
5. Once completed, you will either have to re-power (or reset) your camera.

6. Now you are ready to add the camera to mControl software.
    f. Navigate to the “Settings” page
    g. Select the “Camera” option
    h. Select the “Add Camera” option
    i. Enter the information required to connect to the camera, including:
        - **Name** – the name of the camera (for example, “Back Porch”)
        - **Zone** – the zone that the camera should be displayed within
        - **Model** – the camera model
        - **IP Address** – as per step #2 of this process, enter the IP or host.domain.com address
        - **Port** – HTTP port number assigned for the camera
        - **Username** – as per step #4, enter the Username
        - **Password** – as per step #4, enter the Password
    j. “Save Changes” and return

7. View the camera from the “Zone View” screen



8. Navigate to the “Play” button on the camera device. If you press OK, a full-screen will be displayed.



Adding a Custom Camera

If you do not see your camera supported within mControl's supported list of Security Cameras, it may still be possible to use the camera. Use the following procedure to add a custom camera:

1. Add the custom camera definition to the mServer.exe.xml file located in the C:\Program Files\Embedded Automation\mControl\server directory.

This process is recommended for users familiar with software coding. Please be aware that adding erroneous information to this file may cause failure of mControl to properly start and operate. It is recommended to make a back-up copy of this file before you make changes. Also, this procedure requires knowledge of the custom camera's (ActiveX) objects and parameters.

Add a new section within the <modules> section and make the changes recommended in the table below. (It is recommended that you use the "Axis 21x" base as a starting point.)

```
      <module base="AXIS 21x">
         <mparam name="CLASS" value="CAMERA"/>
         <mparam name="DISPLAY-AS" value="AXIS 210/211"/>
         <mparam name="Description" value="AXIX 21x Series Internet Camera"/>
         <mparam name="MProtocol" value="AXIS"/>
         <mparam name="DefaultImage" value="Camera.gif"/>
         <mparam name="CLASSID" value="745395c8-d0e1-4227-8586-624ca9a10a8d"/>
         <mparam name="CODEBASE"
value="http://{0}:{1}/activex/AMC.cab#version=3,32,14,0"/>
         <object-params>
            <param name="MediaURL" value="http://{0}:{1}/axis-
cgi/mjpg/video.cgi"/>
            <param name="MediaType" value="mjpeg-unicast"/>
            <param name="MediaUsername" value="{2}"/>
            <param name="MediaPassword" value="{3}"/>
            <param name="AutoStart" value="1"/>
            <param name="UIMode" value="none"/>
            <param name="EnableReconnect" value="1"/>
            <param name="StretchToFit" value="1"/>
            <param name="NetworkTimeout" value="5000"/>
            <param name="ShowStatusBar" value="1"/>
         </object-params>
      </module>
```

Make the following changes to the parameters associated with the new <module>:

Element	***Name***	***Value***	***Description***
module	base	string value	Name of the camera type
mparam	CLASS	"CAMERA"	Used by mControl to designate camera device
mparam	DISPLAY-AS	string value	String to show in camera selection page
mparam	Description	string value	Long description of camera
mparam	MProtocol	string value	Protocol associated with the camera
mparam	DefaultImage	string value	Image to associate with the camera
mparam	CLASSID	string value	GUID of the object
mparam	CODEBASE	string value	Location of code for object
param	…	…	Depends on object – please refer to the technical documentation associated with the camera's (ActiveX) object

It is also possible to add parameters which are based on values stored within mControl. Use the following nomenclature to add stored values within mControl to the module:

Parameter	***Substituted Value Loaded at Run-time (from the mControl database for the camera device)***
{0}	IP Address
{1}	HTTP Port Number
{2}	Username
{3}	Password

Using Advanced Camera Functionality from the Camera View page

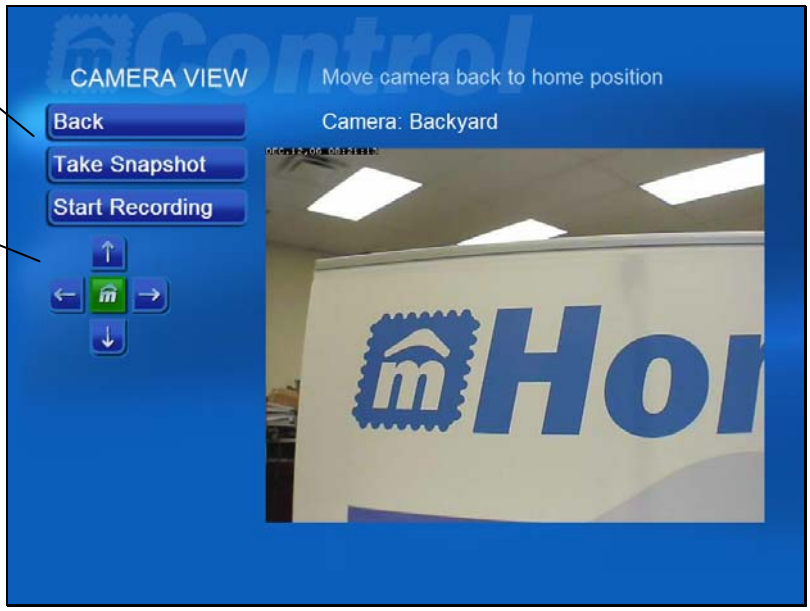
The Camera View page is accessible by pressing the “play” button on any camera device from the main View Zone page.

Access to Camera View Page

The Camera View page will display a full-size live image from the camera and based on the capabilities of the camera, will provide access to advanced camera functionality.

Camera View Options

Pan-Tilt-Zoom Options



Camera View Options
The Camera View buttons provide the following functions:

- **Back** – goes back to the View Zone screen
- **Take Snapshot** – takes a snapshot of the live image. The snapshot is available for viewing in the Camera Media page.
- **Start Recording** – records a video of the live image. The recorded video is available for viewing in the Camera Media page. This will record 60 seconds of video at 2 frames per second. This video will be available a couple of minutes after the button is pressed.

Pan-Tilt-Zoom Options
If panning, tilting and zooming is supported by the camera, buttons will be available to allow for this control.

Using Camera Devices within Macros

Cameras may be used within mControl macros in the following ways:

- Using the camera's native motion sensing capabilities, upon motion detection, trigger an mControl macro.
- As an action within an mControl macro, record a video from the camera
- As an action within an mControl macro, take a snapshot from the camera

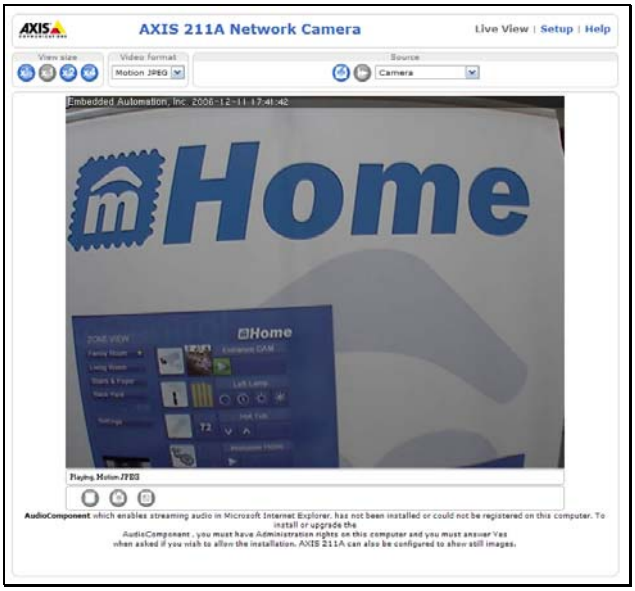
Triggering Macros based on Camera Motion Detection

To trigger a macro based on a camera's native motion sensing capabilities, the camera must first be configured to send a "motion" event to mControl. Once the camera is configured, use mControl's automation functionality to trigger macros based on the camera's motion event.

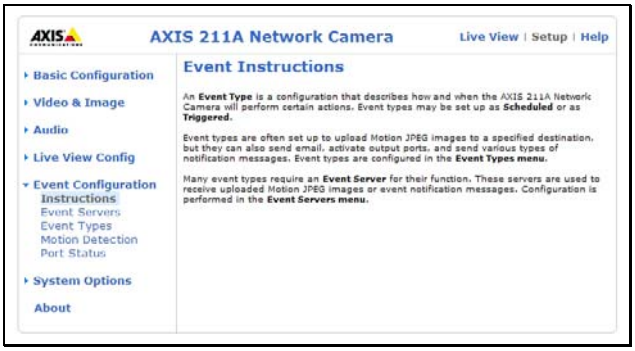
Currently, this functionality is only supported through Axis cameras.

The following set up procedure will configure the camera to send a motion event to mControl:

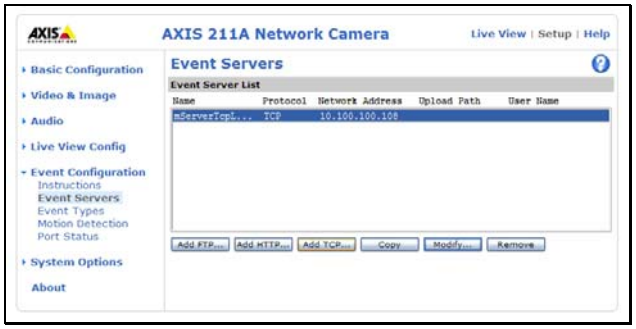
1. Navigate to the camera's IP address to start configuration



2. Navigate to the “Setup” section and then select “Event Configuration”.

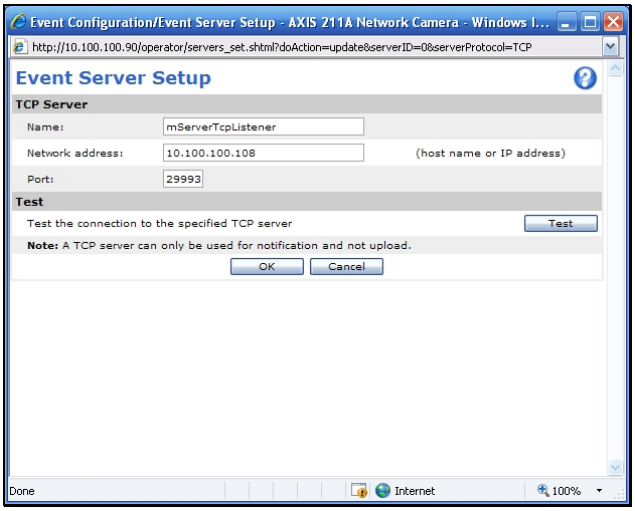

AXIS 211A Network Camera
Live View | Setup | Help
Basic Configuration
Video & Image
Audio
Live View Config
Event Configuration
Instructions
Event Servers
Event Types
Motion Detection
Port Status
System Options
About
Event Instructions
An Event Type is a configuration that describes how and when the AXIS 211A Network Camera will perform certain actions. Event types may be set up as Scheduled or as Triggered.
Event types are often set up to upload Motion JPEG images to a specified destination, but they can also send email, activate output ports, and send various types of notification messages. Event types are configured in the Event Types menu.
Many event types require an Event Server for their function. These servers are used to receive uploaded Motion JPEG images or event notification messages. Configuration is performed in the Event Servers menu.

3. Select the “Event Server” option within the “Event Configuration” section to set the server to which the event will be sent to.

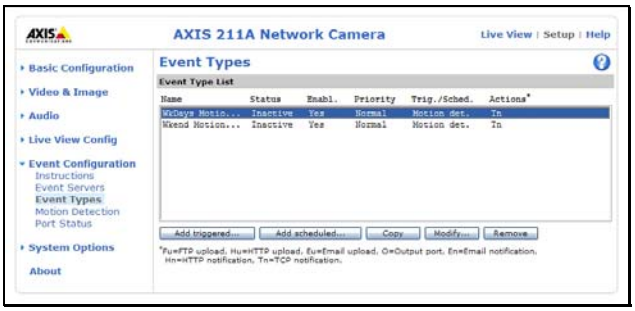


Select the “Add TCP …” tab to add a TCP event. The following parameters are required:

- **TCP Server Name:** mServerTcpListner
- **Network Address:** IP address of the PC running the mControl Automation Service
- **Port:** 29993 (or the port set within the mServer.exe.config file)

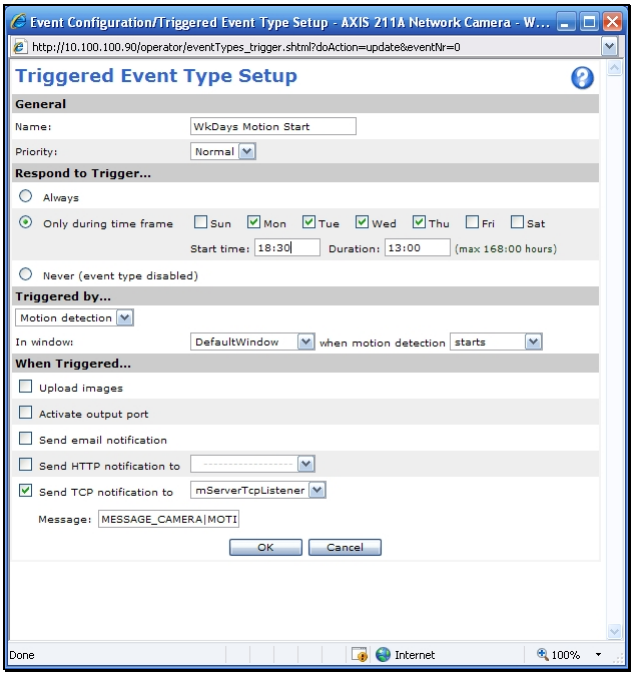


4. Select the “Event Types” option within the “Event Configuration” section to configure the motion detection event.

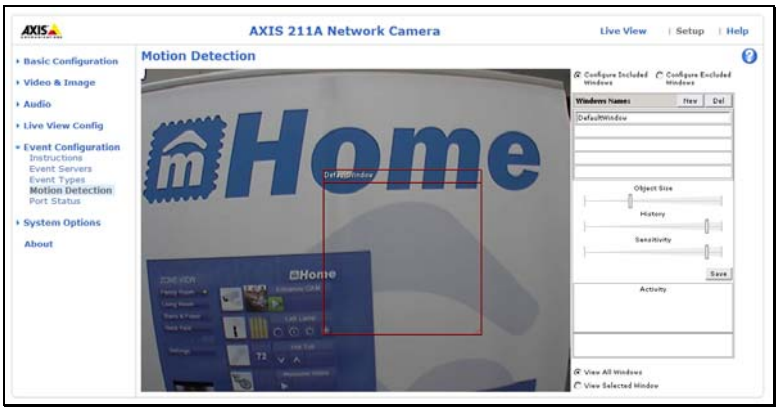


Select the “Add triggered …” tab to add a motion triggered event. The following parameters are required:

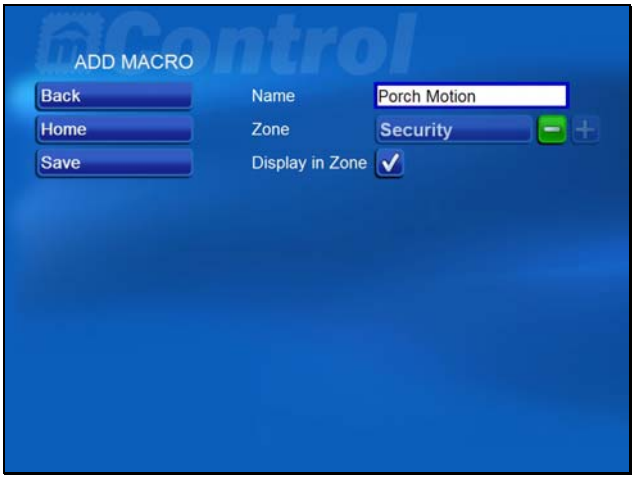
- **Name:** Provide a name for the event
- **Priority:** Normal
- **Respond to Trigger:** Select when the trigger should happen
- **Triggered by:** Select how the trigger should happen
- **When Triggered:**
  - “Send TCP notification to” field must be checked and set to “mServerTcpListner”
  - “Message” field must be filled in with either: “MESSAGE_CAMERA|MOTION START” (if you selected a trigger when motion detection starts) or “MESSAGE_CAMERA|MOTION STOP” (if you selected a trigger when motion detection stops)



5. Select the “Motion Detection” option within the “Event Configuration” section to configure the sensitivity and windows to be used for the motion detection event.



6. Since the camera is now configured to send motion events, it is now possible to add a macro trigger to mControl to act upon this motion event. Create a macro and related trigger.



Recording Videos as a Macro Action

Please note that videos can take a significant amount of disk space and CPU effort.

The size of the video is dependent on the duration (in seconds) of the video, the amount of frames per second for the video and the size of the camera image (320x240).

Once mControl records the incoming video stream, the video converts is then converted AVI format. This conversion process can take a significant amount of CPU effort. The CPU effort is related to the size of the video file being converted.

Embedded Automation recommends the following for generating videos within macros:

- ***Ensure that you have set aside adequate disk space set aside for video recording.***
- ***Record only what is necessary. Ensure that video recording macros do not launch unnecessarily.***
- ***Manage recorded videos by deleting videos that are no longer required.***

To record videos within an mControl macro action, create a macro and add an action with the following parameters:

- **Action Type:** Device
- **Zone:** Zone in which the camera is located
- **Device:** Camera to record from
- **Command:** Select "Record Video" to record video
- **Duration:** Length of the video to record (in seconds)
- **Frames/Second:** Frame rate for the video. While mControl will attempt to record at this frame rate this will also depend on camera's capability, network bandwidth and CPU performance. To control disk space use, remember lower frame rates will make for smaller files.

By default, recorded video is stored in the \mControl\CamStore directory.

To view recorded video, navigate to the Camera Media page:

Taking Snapshots as a Macro Action

To take snapshots within an mControl macro action, create a macro and add an action with the following parameters:

- **Action Type:** Device
- **Zone:** Zone in which the camera is located
- **Device:** Camera to record from
- **Command:** Select "Take Snapshot" to take a snapshot
- **# of Snapshots:** How many snapshots to take
- **Interval:** The amount of time (in seconds) between each snapshot

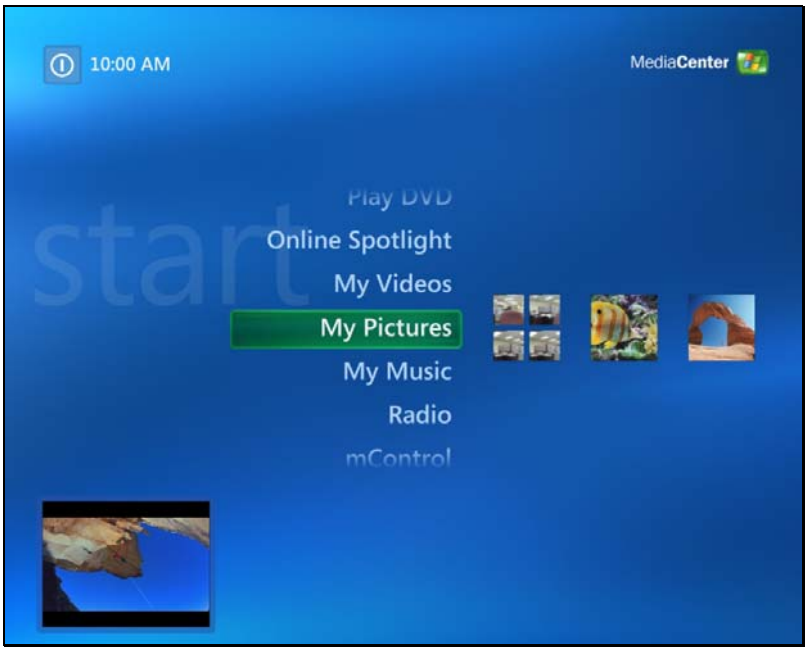
By default, snapshots are stored in the \mControl\CamStore directory.

To view snapshots, navigate to the Camera Media page:

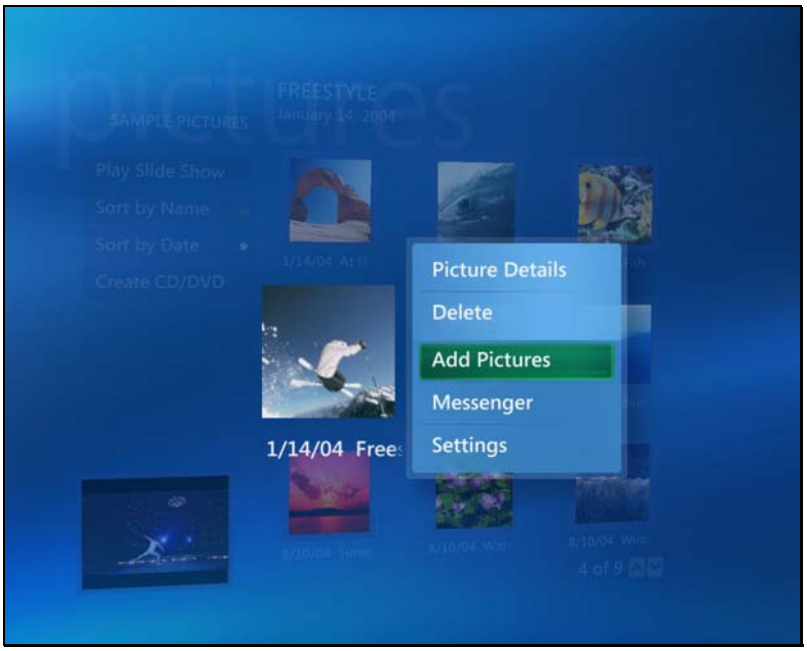
Viewing Recorded Videos and Snapshots within Windows Media Center

If you are using Windows XP Media Center, it is possible to view video and snapshots using Media Center's native video and picture viewing system.

1. Access the "My Videos" or "My Pictures" section of Media Center

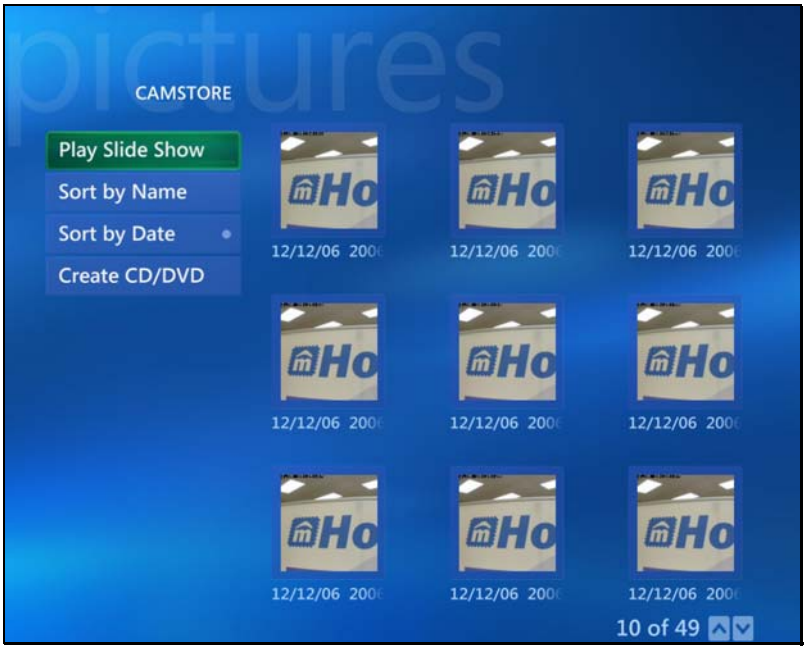


2. Use the Info button on your remote to "Add Pictures".



3. Select the folder where videos and snapshots are being stored to. By default, this folder is located in the C:\Program Files\Embedded Automation\mControl\CamStore directory.

4. Once the folder is added, the videos or snapshots will be available from within Media Center.

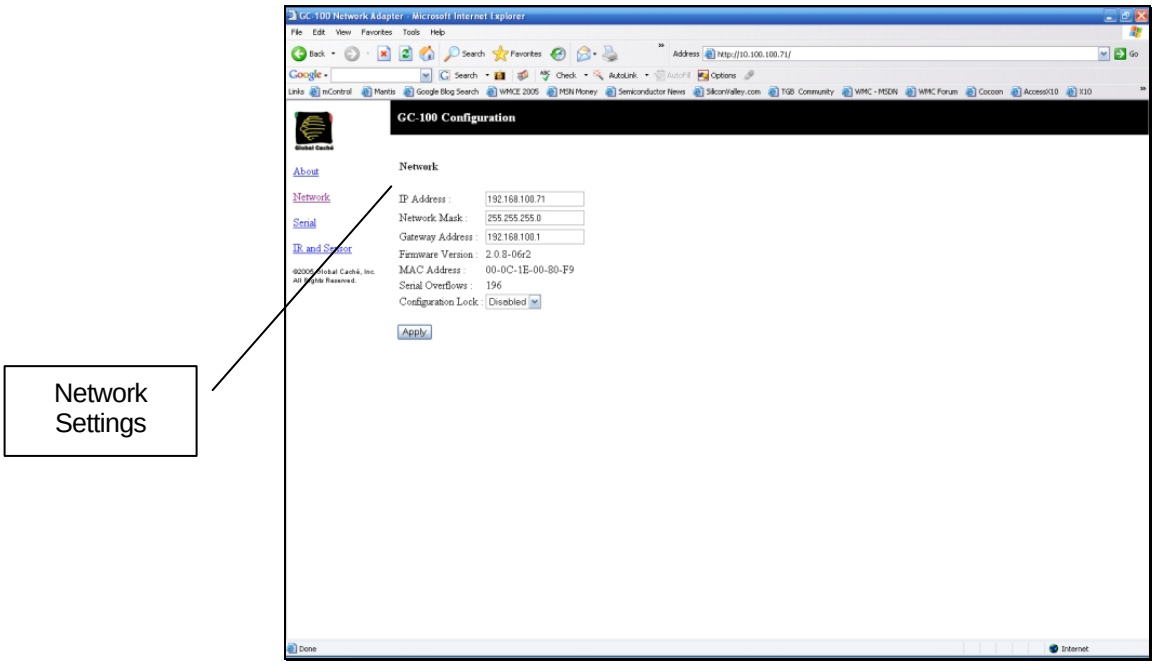


Using IR Commands

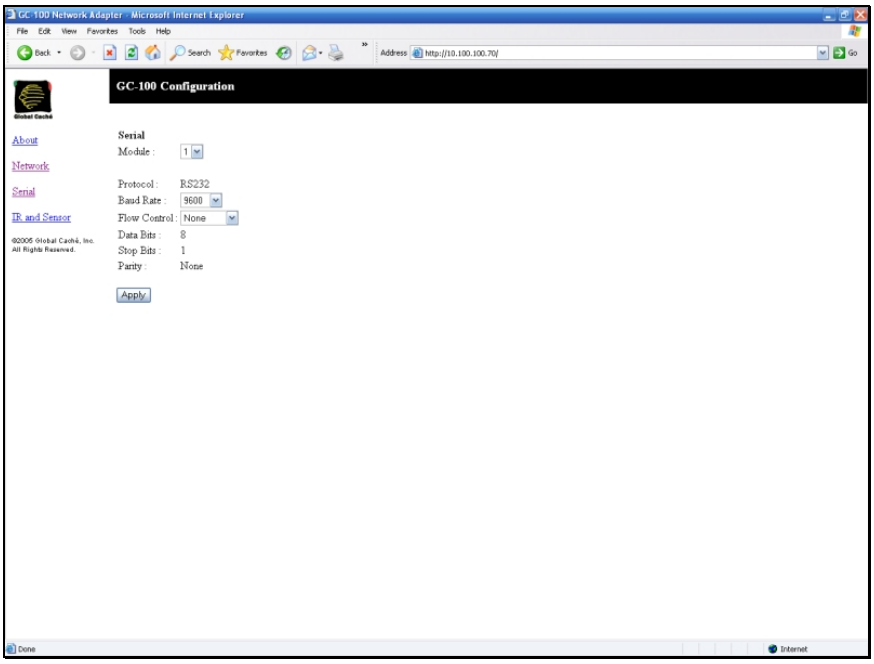
Configuring Global Caché for Use with mControl

1. Follow the instructions provided with your Global Caché Network IR Adapter to complete the hardware set-up, including establishing the wired or wireless network and connecting power.

2. Connect to the GC-100 Network Adapter using the default IP address and configure the IP Address, Network Mask and Gateway Address to be compatible for your network.



You may also want to configure the Port settings for each of the ports available on the GC-100 Network Adapter – mControl use these settings to send and receive IR commands.



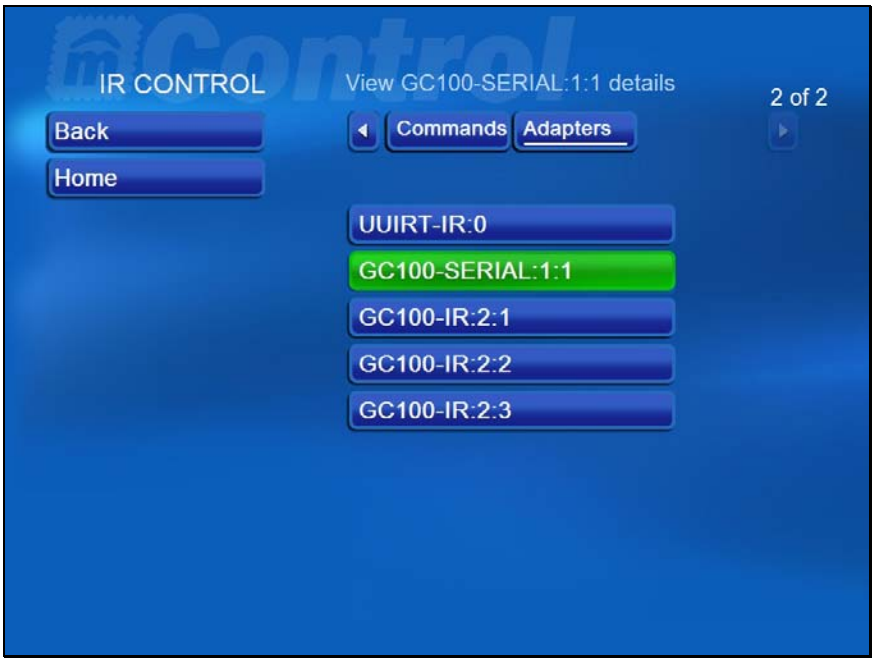
3. Enable and configure the GC-100 Network Adapter within mControl, by editing the configuration settings in the "mServer.exe.xml" located in the C:\Program Files\Embedded Automation\mControl\server directory.

   Open the "mServer.exe.xml" file using Notepad or equivalent text editor, find the section which has configuration settings for the GC-100 Network Adapter and make the following changes:
   - Load the GC-100 Network Adapter driver into mControl – ensure that the load parameter for the adapter is "Y" (see underlined section below).
   - Provide the proper IP Address for the GC-100 Network Adapter – ensure the value of the IP parameter matches the IP Address entered during step #2 (see underlined section below).

```
<adapter base="GC100" load="Y" assembly="GC100.dll"
driver="EmbeddedAutomation.mServer.Adapters.GC100Manager">
        <aparam name="DISPLAY-AS" value="GC-100"/>
        <aparam name="DESCRIPTION" value="GlobalCache Network Adapter"/>
        <aparam name="SUPPORTS" value="GC100"/>
        <aparam name="APROTOCOL" value="GC100"/>
        <aparam name="IP" value="192.168.100.71"/>
</adapter>
```

To enable any changes in adapter XML settings, you must restart the mControl Automation Service, which during initialization reads the XML files.

4. Once successfully configured, the various available ports will be visible on the IR Command page, under the Adapters section.

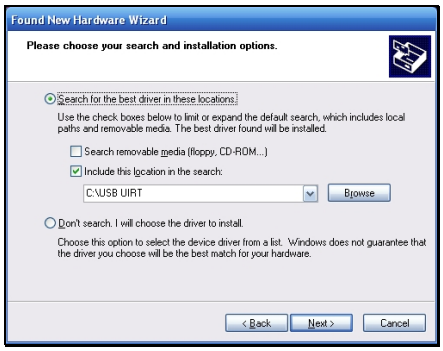


Configuring USB UIRT for Use with mControl

1. Attach the USB UIRT to a free USB port and install the provided drivers.

USB-UIRT drivers v1.4 or higher are recommended – v2.0 drivers are necessary for Vista. Download drivers from the USB-UIRT website at: http://www.usbuirt.com/support.htm

Found New Hardware Wizard
Welcome to the Found New Hardware Wizard
This wizard helps you install software for:
USB-UIRT Device
If your hardware came with an installation CD or floppy disk, insert it now.
What do you want the wizard to do?
Install the software automatically (Recommended)
Install from a list or specific location (Advanced)
Click Next to continue.
< Back
Next >
Cancel


Found New Hardware Wizard
Please choose your search and installation options.
Search for the best driver in these locations.
Use the check boxes below to limit or expand the default search, which includes local paths and removable media. The best driver found will be installed.
Search removable media (floppy, CD-ROM...)
Include this location in the search:
C:\USB UIRT
Browse
Don't search. I will choose the driver to install.
Choose this option to select the device driver from a list. Windows does not guarantee that the driver you choose will be the best match for your hardware.
< Back
Next >
Cancel

Hardware Installation
The software you are installing for this hardware:
USB-UIRT Device
has not passed Windows Logo testing to verify its compatibility with Windows XP. (Tell me why this testing is important.)
Continuing your installation of this software may impair or destabilize the correct operation of your system either immediately or in the future. Microsoft strongly recommends that you stop this installation now and contact the hardware vendor for software that has passed Windows Logo testing.
Continue Anyway
STOP Installation

2. Enable and configure the USB UIRT within mControl, by editing the configuration settings in the “mServer.exe.xml” located in the C:\Program Files\Embedded Automation\mControl\server directory.

   Open the “mServer.exe.xml” file using Notepad or equivalent text editor, find the section which has configuration settings for the USB UIRT and make the following changes:

   - Load the USB UIRT driver into mControl – ensure that the load parameter for the adapter is “Y” (see underlined section below).

```
<adapter base="UUIRT" load="Y" assembly="EA.UUIRT.dll"
driver="EmbeddedAutomation.mServer.Adapters.UUIRTManager">
        <aparam name="DISPLAY-AS" value="USB-UIRT"/>
        <aparam name="Description" value="USB UIRT InfraRed Controller"/>
        <aparam name="Supports" value="UUIRT"/>
        <aparam name="AProtocol" value="UUIRT"/>
        <aparam name="FirstInternalDeviceId" value="-110"/>
        <aparam name="DebugLevel" value="5"/>
        <aparam name="BlinkOnReceive" value="true"/>
        <aparam name="BlinkOnTransmit" value="true"/>
    </adapter>
```

To enable any changes in adapter XML settings, you must restart the mControl Automation Service, which during initialization reads the XML files.

Entering and Testing IR Commands

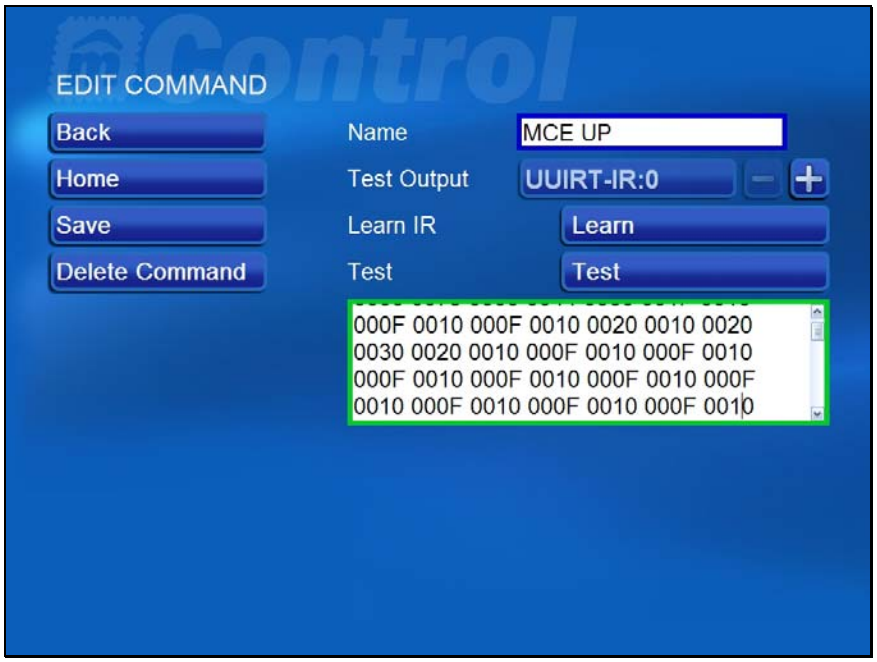
Navigate to the IR Control section to add or learn an IR command. To do this, from the Settings page, select IR Control. From the IR Control page, select the “Commands” tab. Select the “Add IR Command” button to add a new IR command.

Adding IR Commands (using CCF Format)

You can directly enter IR commands (in CCF format) into the IR Command field. For more information on CCF formats, please refer to: http://www.geocities.com/jpollock_2000/ccf.htm.

If you have access to CCF (Component Control File) codes for the command, it is possible to cut and paste them directly into the text box area.

- To get to CCF codes for your component, we recommend http://www.remotecentral.com/
- To convert binary CCF files to text format, we recommend utilities like the CCF Tools utility (also found on http://www.remotecentral.com/).

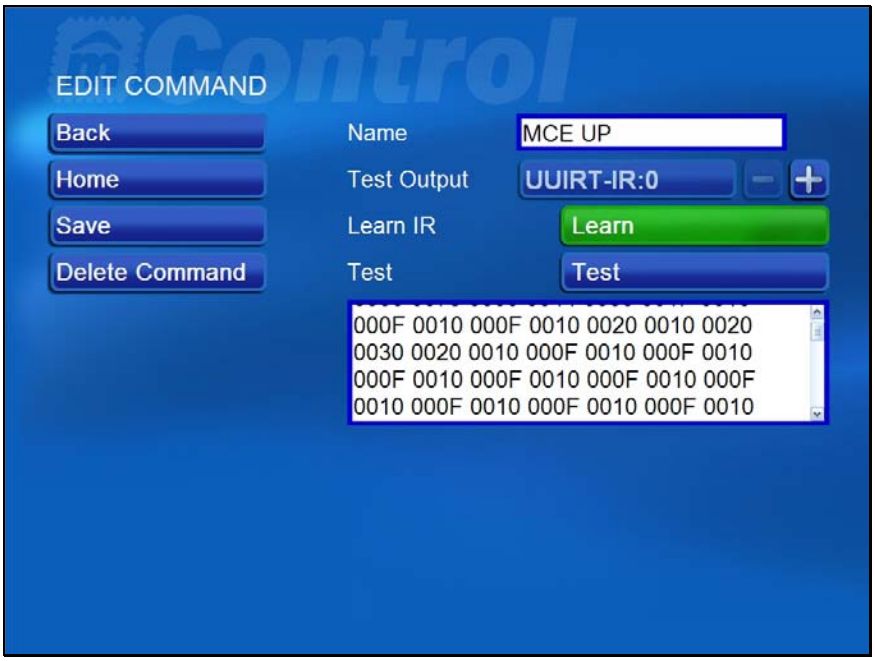


mControl only supports IR commands less than 1300 characters.

Learning IR Commands

If you have a GC-IRL (Global Cache IR Learner adapter connected to the GC-100 Network Adapter) or a USB UIRT, you can learn the IR command.

To do this, press the “Learn” button and within a 10 second time frame enter the command by pressing the remote control button while pointing at the GC-IRL or the USB UIRT. The command will appear in the text box in CCF format.

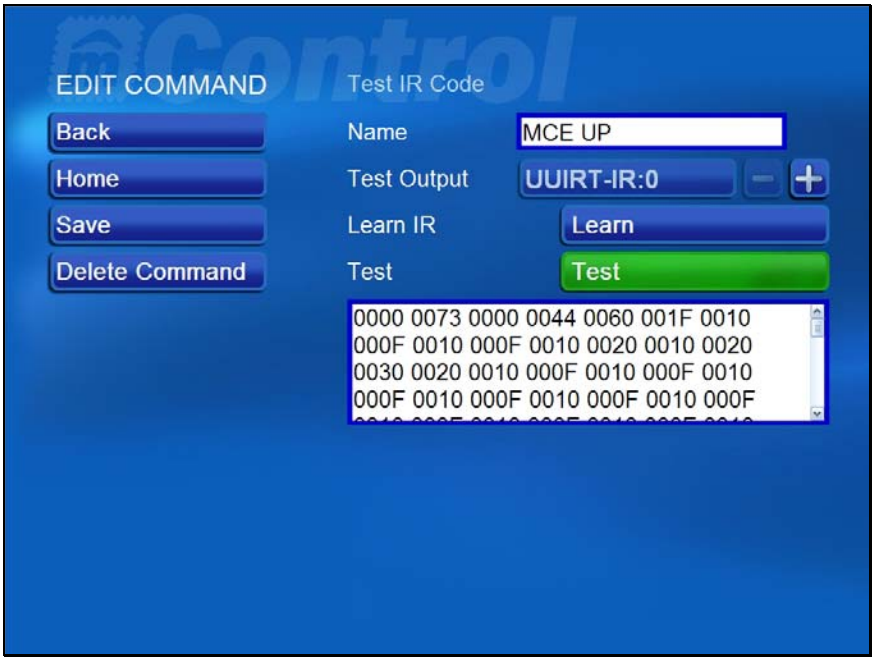


mControl only supports IR commands less than 1300 characters. To properly learn commands, it is recommended that you press and release the remote button you are learning – do not hold it down. Holding the button may send fill the IR buffer with unnecessary repetitive information.

When learning using the USB-UIRT, please ensure that you hold down the button on your remote until the command is fully recognized and entered into the IR Command field.

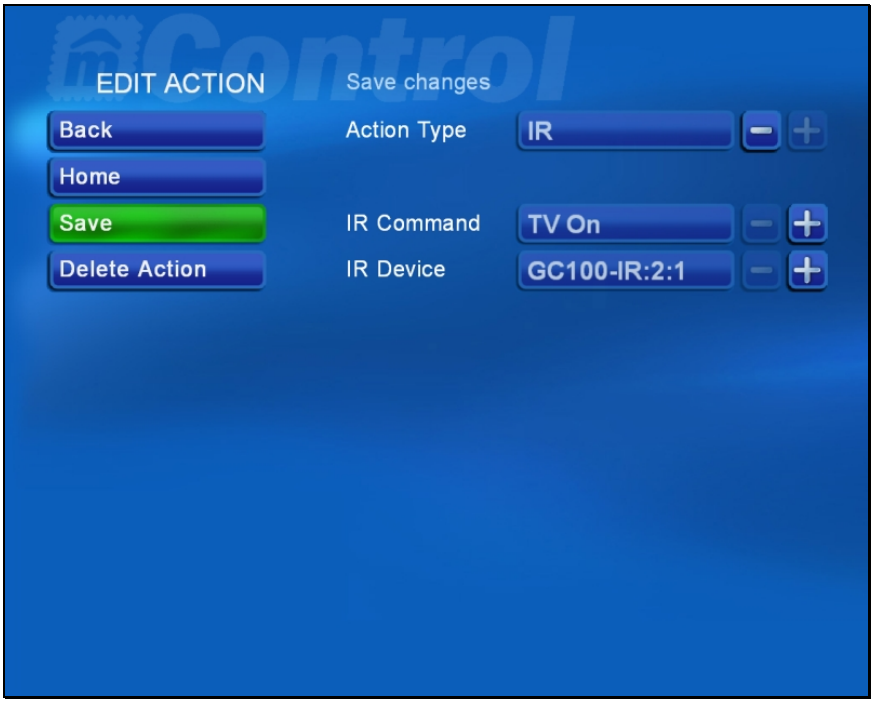
Testing IR Commands

To test an added or learned IR command, use the “Test Output” selector to select the port where you would like to “blast” the IR command. Once selected, press the “Test” button to send the IR command through the selected port.



Sending IR commands within mControl Macros Actions

Within any macro, add an action of type “IR”, selecting a previously entered IR command.



Using IR commands as mControl Macros Triggers

mControl contains logic to recognize incoming IR signals and compare them to previously entered IR commands. If there is a match, it can be used to trigger a macro.

Within any macro, add a trigger of type “IR”, selecting a previously entered IR command. Any time that mControl recognizes this command, the macro will execute.

IR Commands and Windows XP Media Center Edition 2005

A reference of Windows XP Media Center Edition 2005 CCF commands can be found here: http://www.remotecentral.com/cgi-bin/files/rcfiles.cgi?kw=media+center&fc=--&area=pronto&db=&br=&dv=&dt=&so=

Please note, Windows XP Media Center Edition 2005 utilizes a two-code IR command toggle system to eliminate “bounce” or double keying. The debounce setting of Media Center can be disabled, thereby allowing a single command to represent the IR command. For a good reference on this topic, see: http://blogs.msdn.com/mswanson/archive/2004/12/01/272766.aspx.

Adding Voice Control

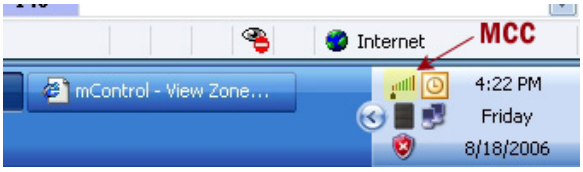
Basic Voice Control Operation

With One Voice Technologies' Media Center Communicator, mControl devices and macros can be operated via voice control.

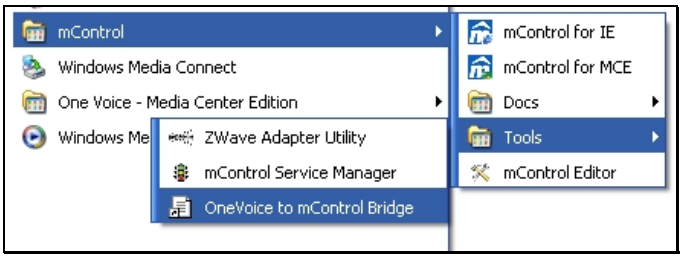
1. Install One Voice Technologies' Media Center Communicator v2.x. Follow the instructions provided to properly set up and train Media Center Communicator.

Once installed, Media Center Communicator will allow you to control Windows Media Center functionality.

Outside of Media Center, the Media Center Communicator's status will also be visible in the system tray.

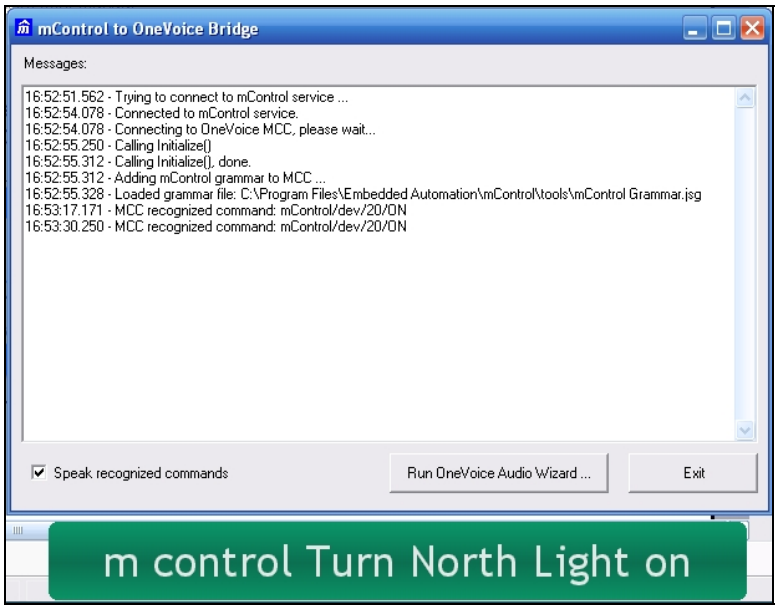


2. To initiate a bridge between Media Center Communicator and mControl, run the One Voice to mControl Bridge utility provided in the mControl Tools folder.



Once started, the One Voice to mControl Bridge utility will automatically connect to both the Media Center Communicator voice system and the mControl Automation Service.

In addition, the One Voice to mControl Bridge utility will automatically read the contents of the mControl database and generate a Media Center Communicator grammar file based on the devices and macros within the database.


mControl to OneVoice Bridge
Messages:
16:52:51.562 - Trying to connect to mControl service ...
16:52:54.078 - Connected to mControl service.
16:52:54.078 - Connecting to OneVoice MCC, please wait...
16:52:55.250 - Calling Initialize()
16:52:55.312 - Calling Initialize(), done.
16:52:55.312 - Adding mControl grammar to MCC ...
16:52:55.328 - Loaded grammar file: C:\Program Files\Embedded Automation\mControl\tools\mControl Grammar.jsg
16:53:17.171 - MCC recognized command: mControl/dev/20/ON
16:53:30.250 - MCC recognized command: mControl/dev/20/ON
Speak recognized commands
Run OneVoice Audio Wizard ...
Exit
m control Turn North Light on

Use the "Speak recognized commands" check box to hear a verbal response to commands.

3. To use voice control, simply issue voice commands in either of the following ways:

   For lights and simple devices:

   - “mControl, please turn <device> <command>” or “mControl, turn <device> <command>”
   - “mControl, please turn <command><device>” or “mControl, turn <command><device>”

   For mControl macros:

   - “mControl, run <macro name>”

Extending Voice Control

Source code for the One Voice to mControl Bridge utility is provided as part the mControl Software Development Kit (SDK).

It is possible to extend the grammar file, allowing for greater flexibility in voice commands. The auto-generated grammar file is located in the C:\Program Files\Embedded Automation\mControl\tools directory and is called “mControl Grammar.jsg”. Do not adjust this manually.

Configuring mControl Clients

Using mControl from a remote PC using Internet Explorer

1. Start Internet Explorer and enter the following in the address area: http://<mControl PC>:29990/default.aspx, where "<mControl PC>" is the name or IP address of the PC on which mControl was installed on.

Adding mControl to a remote Windows XP Media Center Edition PC

Please note, this is an unsupported feature of mControl and once implemented, requires manual editing of your Windows registry – the mControl uninstaller does not remove these settings. We recommend making a back-up of your Windows registry before any substantive changes.

1. Copy the mControl.mcl file located in the "`C:\Program Files\Embedded Automation\mControl`" directory to the new client machine's "`C:\Documents and Settings\<user of your choice>\Start Menu\Programs\Accessories\Media Center\Media Center Programs`" directory.

2. Edit the file using Notepad to modify the URL, replacing 'localhost' with the name of the new client machine. For example, if your mControl Automation Service machine is called 'MyServer, you would change the URL setting to "http://MyServer:29990/Default.aspx".

3. Once the file has been modified, you will be able to access it from the "More Programs" area of the client machine.

If you refer to machine's name instead of the IP address, please ensure that the name is entered in the Windows Hosts file with the associated IP address, so Windows can resolve the machine's name. For more information on Hosts files: http://en.wikipedia.org/wiki/Hosts_file

Adding mControl to the Start Menu of a Windows XP Media Center Edition PC

Please note, this is an unsupported feature of mControl and once implemented, requires manual editing of your Windows registry – the mControl uninstaller does not remove these settings. We recommend making a back-up of your Windows registry before any substantive changes.

To use this function on a remote PC, first perform the step above to "Add mControl to a Remote Windows XP Media Center Edition PC".

Only a maximum of two 3rd party items can be added to the "Start Menu" – so if two 3rd party items are already installed on the "Start Menu", the following steps will have no effect.

1. Using Notepad or equivalent text editor, copy the following into a file called mControl.reg:

```
Windows Registry Editor Version 5.00

[HKEY_LOCAL_MACHINE\Software\Microsoft\Windows\CurrentVersion\Media
Center\Extensibility\Categories\Start Menu\{5688C348-8F19-4676-97F4-
5178A68C37EC}]
"AppID"="{aebf238a-a1c5-4354-ba23-e693cb9f219f}"
"TimeStamp"=dword:0add6130
"Title"="mControl"
"URL"="http://localhost:29990/Default.aspx"
```

Please ensure that the "[HKEY_LOCAL_ … C37EC}]" line is not split into multiple lines in the mControl.reg file otherwise the key entry will be erroneous.

2. After saving the file, double-click on the file or, within Explorer, perform a right-click and select the "Merge" option. You will be asked if you want to add the information to the Windows registry. Once you agree, the registry settings will be added and mControl will be available on the "Start Menu" when Media Center is re-started.

Adding mControl to the More Programs Menu of a Windows XP Media Center Edition PC

Please note, this is an unsupported feature of mControl and once implemented, requires manual editing of your Windows registry – the mControl uninstaller does not remove these settings. We recommend making a back-up of your Windows registry before any substantive changes.

To use this function on a remote PC, first perform the step above to "Add mControl to a Remote Windows XP Media Center Edition PC".

1. Using Notepad or equivalent text editor, copy the following into a file called mControl.reg:

```
Windows Registry Editor Version 5.00

[HKEY_LOCAL_MACHINE\SOFTWARE\Microsoft\Windows\CurrentVersion\Media
Center\Extensibility\Applications\{aebf238a-a1c5-4354-ba23-e693cb9f219f}]
"CompanyLogo"="C:\\Program Files\\Embedded
Automation\\mControl\\EmbeddedLogo.png"
"Description"="mControl for Windows MCE 2005"
"Title"="mControl"
"CompanyName"="Embedded Automation, Inc."

[HKEY_LOCAL_MACHINE\SOFTWARE\Microsoft\Windows\CurrentVersion\Media
Center\Extensibility\Categories\More Programs\{3de6904a-d9c7-4ef9-b77d-
c1216b39161f}]
"Title"="mControl"
"ThumbnailUrl"="C:\\Program Files\\Embedded
Automation\\mControl\\mHome_Thumbnail.png"
"Subtitle"="mControl for Windows MCE 2005"
"TimeStamp"=dword:09eea8e3
"AppId"="{aebf238a-a1c5-4354-ba23-e693cb9f219c}"
"ImageUrl"="C:\\Program Files\\Embedded Automation\\mControl\\EmbeddedLogo.png"
"Url"="http://localhost:29990/Default.aspx"
```

2. After saving the file, double-click on the file or, within Explorer, perform a right-click and select the "Merge" option. You will be asked if you want to add the information to the Windows registry. Once you agree, the registry settings will be added and mControl will be available on the "Start Menu" when Media Center is re-started.

3. Copy the files "EmbeddedLogo.png" and "mHome_Thumbnail.png" from the machine that mControl is installed in to the remote Windows Media Center PC. Change the entries "CompanyLogo", "ThumbnailUrl", and "ImageUrl" above to the directory where you have placed the copied images to.

Adding mControl to SnapStream's Beyond Media

Add a mControl Entry Point to the Beyond Media Menu

- Navigate to directory where the file "Menus.xml" is located. The default location is *C:\Documents and Settings\All Users\Application Data\SnapStream\Beyond Media*
- Open the file "Menus.xml" with a text editor, like Notepad.exe.
- Find the following entry:

```
<MenuItem Id="Spotlight" Label="Spotlight" Image="SSBM_MainMenu_Spotlight">
   <MenuItem.Action>
      <ShowScreen Screen="Spotlight" ScreenArgs="http://www.snapstream.com/spotlight/" />
   </MenuItem.Action>
</MenuItem>
```

- Add the following entry directly below the entry above:

```
<MenuItem Id="mControl" Label="mControl" Image="">
   <MenuItem.Action>
      <ShowScreen Screen="mControl" ScreenArgs="http://[localhost]:29990/" />
   </MenuItem.Action>
</MenuItem>
```

- Replace [localhost] with the IP address of the PC running mControl.
- Save the changes to the "Menu.xml" file and restart Beyond Media
- Once Beyond Media is restarted, mControl should be under the main menu:

Add a mControl icon to the mControl Menu Entry

- Navigate to the Beyond Media skins directory. The default location is *C:\Documents and Settings\All Users\Application Data\SnapStream\Beyond Media/skins.*
- Using a text editor (e.g., Notepad.exe), open the desired skins XML file. Typical skins include: *BlueWave.xml, BTV.xml or Classic.xml.*
- Add an entry in the file for the mControl icon. The following example provides a path to the mControl.png file located under the "BTV" sub directory. **Make sure that the ID attribute is unique.**

```
e.g. <Image Id="SSBM_mControl" Path="BTV\mControl.png" />
```

- Place the image file in the corresponding directory, that is: *C:\Documents and Settings\All Users\Application Data\SnapStream\Beyond Media/skins/BTV*
- Open the file "Menus.xml" (as per the above instructions) and edit the mControl entry to use the Image ID name. Make sure that the Image attribute is equal to the Image ID of the image entry in the skins XML file.

```
<MenuItem Id="mControl" Label="mControl" Image="SSBM_mControl">
   <MenuItem.Action>
      <ShowScreen Screen="Spotlight" ScreenArgs="http://[localhost]:29990/" />
   </MenuItem.Action>
</MenuItem>
```

Integrating with CasaTunes

- Navigate to directory where the file "mControlDataSet.xml" is located. The default location is *C:\Program Files\Embedded Automation\mControl.* Adjust the "casatuneUrl" element to point to your installation of CasaTunes:

```
  <casatunesUrl> http://localhost/casatunes</casatunesUrl>
```

Configuring the mControl User Interface

mControl allows configuration of User Interface settings within the mControlDataSet.XML file. located within the \Program Files\Embedded Automation\mControl directory.

Before making any changes to the mControlDataSet.XML file, please make a back up. Please ensure all changes comply with XML - improper XML may affect the operation of mControl.

To enable any custom settings, you must restart the mControl Automation Service, which during initialization reads the XML files. Please make a back-up of any XML file before making changes.

Adding Custom Device Images

To add an image for a device, add a <device-image> element to the mControlDataSet.XML file.

- Images of type PNG, GIF, and JPEG are preferred. Image size should be 120 by 120 pixels for best display – other sizes will be scaled up/down to fit and may appear distorted.

- A blank image, called "Blank.gif" is provided in the "C:\Program Files\Embedded Automation\mControl\images\<platform folder>\<theme folder>\device" directory. You may use this image as a template for creating a custom device image.

In this sample, a "Chime" device, which uses the "Chime.gif" image has been added (shown in red).

```
<images>
        <device-image>
                <image-name>Chime</image-name>
                <image-file>Chime.gif</image-file>
        </device-image>
        <device-image>
                <image-name>Lamp</image-name>
                <image-file>Lights.gif</image-file>
        </device-image>
</images>
```

Adding Custom Options

Using the mControlDataSet.XML file, it is possible to adjust the following elements defined within the <configuration> section:

Element	Description	Default Values
<time-offset>	Defines the time offsets (in minutes) options for macro operations. Negative values indicate offsets before and positive values indicate offsets after the base time.	-60, -45, -30, -20, -15, -10, -5, +0, +5, +10, +15, +20, +30, +45, +60
<dimvalues>	Defines the options for dim granularity for a multi-level switch.	10, 20, 25, 50, 75
<onvalues>	Defines the options for on levels for a multi-level switch – used with device action within macros.	20, 40, 60, 80, 100
<delay-hours>	Defines the hours option value within a macro delay action.	0, 1, 2, 3, 4, 5, 6, 8, 10, 12, 24
<delay-minutes>	Defines the minutes option value within a macro delay action.	00, 01, 02, 03, 04, 05, 10, 15, 20, 30, 45
<delay-seconds>	Defines the seconds option value within a macro delay action.	00, 01, 02, 03, 04, 05, 10, 15, 20, 25, 30, 40, 50
<cam-vid-duration>	Defines the duration (in seconds) for a camera to keep recording within a macro device action.	1, 2, 3, 5, 10, 15, 20, 25, 30, 35, 40, 45, 50, 55, 60
<cam-vid-framerate>	Defines what frame rate the camera should record video in.	1, 2, 3, 4, 5, 10, 30
<cam-vid-frameratedisp>	This is tied to <cam-vid-framerate> this displays the options in a clear and more meaningful way.	1 fps, 2 fps, 3 fps, 4 fps, 5 fps, 10 fps, Best Possible
<cam-snap-interval>	Defines the time interval between consecutive camera snapshots in a macro action.	1, 2, 3, 5, 10, 15, 20, 25, 30, 35, 40, 45, 50, 55, 60
<cam-snap-pics>	Defines the number of snapshots to take in a camera macro action.	1, 2, 3, 5, 10, 15, 20, 25, 30

In the following sample, a 33% dim granularity has been added (as shown in red).

```
<configuration>
       <time-offset>-60|-45|-30|-20|-15|-10|-
              5|+0|+5|+10|+15|+20|+30|+45|+60</time-offset>
       <dimvalues>10|20|25|33|50|75</dimvalues>
       <delay-hours>0|1|2|3|4|5|6|8|10|12|24</delay-hours>
       <delay-minutes>00|01|02|03|04|05|10|15|20|30|45</delay-minutes>
       <delay-seconds>00|01|02|03|04|05|10|15|20|25|30|40|50</delay-
       seconds>
</configuration>
```

Adding Custom Style Sheets

Using the mControlDataSet.XML file, it is possible to create or modify style sheets or "skins" for mControl.

mControl style sheets consist of the following elements:

Element	Description
<style-sheet>	Parent element which encapsulates the style sheet. **id** – defines the name of the "Style" which shows in the "Configuration" section of mControl.
<filename>	Child element which defines the associated html style sheet name (.css file) for the skin.
<imageDir>	Child element which defines the directory name for where the images for the skin are located.
<platforms>	Child element which defines the platforms available for the skin.
<javaMCE> <javaIE> <javaUMPC>	Child element which defines the JavaScript variables required for positioning data-related items within the mControl user interface framework. **index** – defines the array index for the JavaScript variable **value** – defines the value for the JavaScript variable
<MCE> <IE> <UMPC>	Child element which defines the XML variables required for defining the mControl user interface framework. **name** – defines the name of the XML variable **value** – defines the value of the XML variable

User Interface Platforms

mControl supports the following platforms:

- IE – for Internet Explorer 6.0 and higher clients
- MCE – for Media Center clients
- UMPC – for UMPC browser clients

If a selected style is not available for a platform, mControl will default to the "Blue – Static" style for that platform.

mControl Images

mControl uses graphic images to form elements on the screen. These images can be animated or static.

For a complete list of images to create for a new skin, please refer to the images located within the C:\Program Files\Embedded Automation\mControl\images\ie\blue_static directory.

Style Sheets

mControl uses external DHTML cascading style sheets (CSS) to define image and text sizes and formats.

The following table lists the classes required for a mControl skin:

Class	Description
Common Application Objects	
.appName	mControl image
.appInfo	mControl page
.appView	mControl page function
.background	Background image
.bodyClass	Body definition
Buttons	
.AllZone	Zone buttons (no focus)
.AllZone_hilite	Zone buttons (focus)
.Button	General button (no focus)
.Button_hilite	General button (focus)
.ButtonMini	Small button (no focus)
.ButtonMini_hilite	Small button (focus)
.MedButton	Medium button (no focus)
.MedButton_hilite	Medium button (focus)
Radio Buttons	
.CurrentZone	Current zone (no focus)
.CurrentZone_hilite	Current zone (focus)
.Zone	Zone buttons (no focus)
.Zone_hilite	Zone buttons (focus)

Class	Description
Page Up/Down Buttons	
.arrowL	Arrow left
.arrowR	Arrow right
.devDown	Device down (no focus)
.devDown_hilite	Device down (focus)
.devUp	Device up (no focus)
.devUp_hilite	Device up (focus)
.pageUp	Page up
.pageDown	Page down
User Console Device Buttons	
.devOn	Device on (no focus)
.devOn_hilite	Device on (focus)
.devOff	Device off (no focus)
.devOff_hilite	Device off (focus)
.devDim	Device dim (no focus)
.devDim_hilite	Device dim (focus)
.devBright	Device bright (no focus)
.devBright_hilite	Device bright (focus)
.devUp	Device up (no focus)
.devUp_hilite	Device up (focus)
.macRun	Macro play (no focus)
.macRun_hilite	Macro play (focus)
User Console Blank Controls	
.devImg	Device image
.devNameLbl	Device name label
.devStatus	Device status image
.macNoFnc	Empty image for macros
.devNoFnc	Empty image for devices
.devNoFncMini	Empty image for devices (small)

Class	Description
Check Boxes	
.blankBox	Unchecked box (no focus)
.blankBox_hilite	Unchecked box (focus)
.checkBox	Checked box (no focus)
.checkBox_hilite	Checked box (focus)
Check Boxes	
.infoBox	Info box
.infoBoxLrg	Info box (large)
Spinner Buttons	
.SpinnerBox	Spinner box
.SpinnerBoxSm	Spinner box (small)
.spinnerMBtnZ	Minus spinner button for dynamic data lists (no focus)
.spinnerMBtnZ_hilite	Minus spinner button for dynamic data lists (focus)
.spinnerPBtnZ	Plus spinner button for dynamic data lists (no focus)
.spinnerPBtnZ_hilite	Plus spinner button for dynamic data lists (focus)
.spinnerMBtn	Minus spinner button for static data lists (no focus)
.spinnerMBtn_hilite	Minus spinner button for static data lists (focus)
.spinnerPBtn	Plus spinner button for static data lists (no focus)
.spinnerPBtn_hilite	Plus spinner button for static data lists (focus)
Text Fonts and Styles	
.textControl	General text (no focus)
.textControl_hilite	General text (focus)
.hvacStatusText	HVAC status text
.devStatusText	General device status text
.errorText	Error text
.textMenuHeader	Menu header text
.textWhite	General white text
.textWhiteSmall	General white text (small)
.textDisabled	General text (disabled)

Class	Description
Thermostat	
.consoleThermo	Thermostat console image
.consoleThermoStatus	Thermostat status image
.devTexty	Thermostat text
.thermoCool	Thermostat cool mode image
.thermoHeat	Thermostat heat mode image
.thermoAuto	Thermostat automatic mode image
.thermoOff	Thermostat off mode image
.thermoFanOn	Thermostat fan on image
.thermoFanOff	Thermostat fan off image
.thermoFanAuto	Thermostat fan automatic image
.setpointHeatOn	Thermostat heat set-point on
.setpointHeatOff	Thermostat heat set-point off
.setpointCoolOn	Thermostat cool set-point on
.setpointCoolOff	Thermostat cool set-point off
.StatusThermo	Thermostat status image
Sprinkler	
.sprinklerValveOn	Sprinkler valve status on
.sprinklerValveOff	Sprinkler valve status off
.sprinklerProgOn	Sprinker program status on
.sprinklerProgOff	Sprinker program status off
Security System	
.consoleSecurity	Security console image
.consoleSecurityStatus	Security status image
.securityReady	Security status – ready
.securityNotReady	Security status – not ready
.securityArmed	Security armed status – armed
.securityNotArmed	Security armed status – not armed

Class	Description
Scrollers and Counters	
.counterDefaultLHS	Counter for LHS buttons (e.g., zones) for View Zone page.
.counterGeneral	Counter for general buttons (e.g., devices)
.scrollDefaultLHS	Scrolling Pane for LHS buttons for View Zone page
.scrollGeneral	Scrolling Pane for majority of mControl pages
.scrollLarge	A scrolling pane with larger dimensions
.menuSpan	Horizontal scrolling pane for all menu bars
Triple-Tap and Input Fields	
.tripleTap	Media Center general triple-tap input box
.spanTripleTap	Placeholder for a general triple-tap input box
.spanTripleTapMini	Placeholder for a mini triple-tap input box
.tripleTap2	IE / UMPC general input box (no-focus)
.tripleTap2_hilite	IE / UMPC general input box (focus)
.tripleTapMini	IE / UMPC mini input box placeholder (no-focus)
.tripleTapMini_hilite	IE / UMPC mini input box placeholder (focus)
.textControlSpan	General input box placeholder (focus)
.textControlSpan_hilite	General input box placeholder (focus)
.textControlSpanMini	Placeholder for a mini triple-tap input box
.textControlSpanMini_hilite	Placeholder for a mini triple-tap input box

Class	Description
Camera	
.camLeftBtn	Camera left button (no focus)
.camLeftBtn_hilite	Camera left button (focus)
.camRightBtn	Camera right button (no focus)
.camRightBtn_hilite	Camera right button (focus)
.camUpBtn	Camera up button (no focus)
.camUpBtn_hilite	Camera up button (focus)
.camDownBtn	Camera down button (no focus)
.camDownBtn_hilite	Camera down button (focus)
.camHomeBtn	Camera home button (no focus)
.camHomeBtn_hilite	Camera home button (focus)
.camZoomInBtn	Camera zoom in button (no focus)
.camZoomInBtn_hilite	Camera zoom in button (focus)
.camZoomOutBtn	Camera zoom out button (no focus)
.camZoomOutBtn_hilite	Camera zoom out button (focus)
.camTypePic	Camera type indicator image
.camTypeVid	Camera type indicator video

JavaScript Variables

mControl uses JavaScript variables to define how mControl data elements are positioned within the skin. Devices and zones are examples of mControl data elements.

The following table lists the JavaScript variables required for an mControl skin:

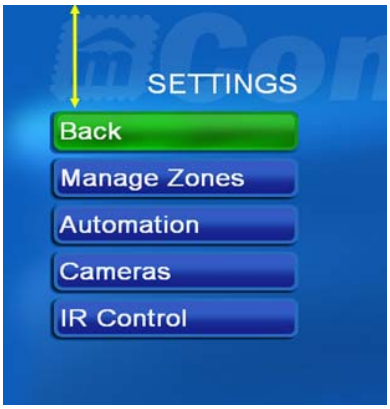
Used in Page	Array Index	Description
Default (View Zone)	0	Device objects vertical offset (top-to-top)
Default (View Zone)	1	Device label height
Default (View Zone)	2	Device image left
Default (View Zone)	3	Device status left
Default (View Zone)	4	Device label/on left
Default (View Zone)	5	Device off left
Default (View Zone)	6	Device dim left
Default (View Zone)	7	Device bright left
Default (View Zone)	8	Security armed left
Default (View Zone)	9	Security armed top
Default (View Zone)	10	Security ready left
Default (View Zone)	11	Security ready top
Default (View Zone)	12	HVAC font size
Default (View Zone)	13	HVAC text left
Default (View Zone)	14	HVAC mode left
Default (View Zone)	15	HVAC mode top
Default (View Zone)	16	HVAC fan left
Default (View Zone)	17	HVAC status top
Default (View Zone)	18	Button vertical offset (top-to-top)
Default (View Zone)	19	Camera preview width
Default (View Zone)	20	Camera preview height
ManageZones	21	Span objects vertical offset (top-to-top)
ManageZones	22	Zone up left
ManageZones	23	Zone down left
EditZone	24	Span objects vertical offset (top-to-top)
Automation	25	Span objects vertical offset (top-to-top)
General	26	Mini-button width
EditIRCommand	27	Code span width
EditIRCommand	28	Code span height
Automation	29	Arrow up left
Automation	30	Arrow down left
IRList	31	Span objects vertical offset (top-to-top)
ActionList	32	Span objects vertical offset (top-to-top)
ActionList	33	Item name left
ActionList	34	Arrow up left
ActionList	35	Arrow down left
SecurityView	36	Span objects vertical offset (top-to-top)

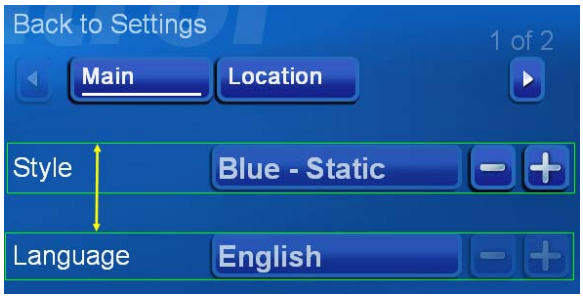
Used in Page	Array Index	Description
SecurityView	37	Partition item left
General	38	Maximum # characters to display onscreen LHS Buttons
General	39	Maximum # characters to display onscreen
Default (View Zone)	40	EZRain program left
Default (View Zone)	41	EZRain valve top
Default (View Zone)	42	EZRain valve vertical offset (top-to-top)
Default (View Zone)	43	EZRain 2nd valve list left
CameraView	44	Camera object width
CameraView	45	Camera object height
CameraList	46	Span objects vertical offset (top-to-top)

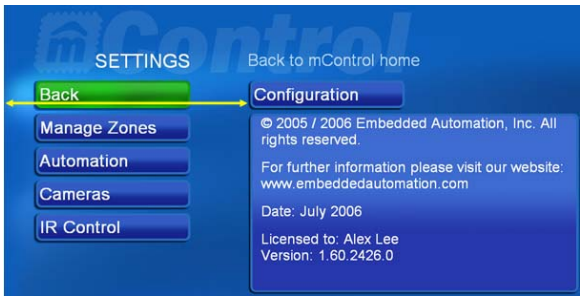
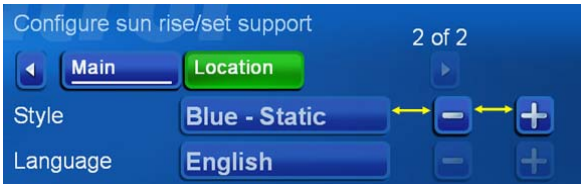
XML Variables

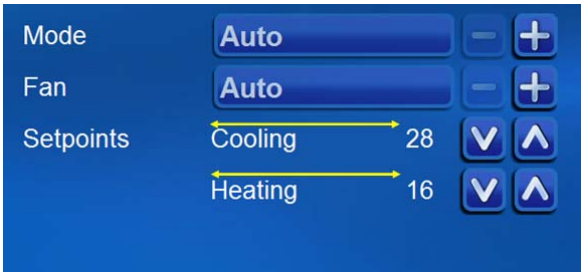
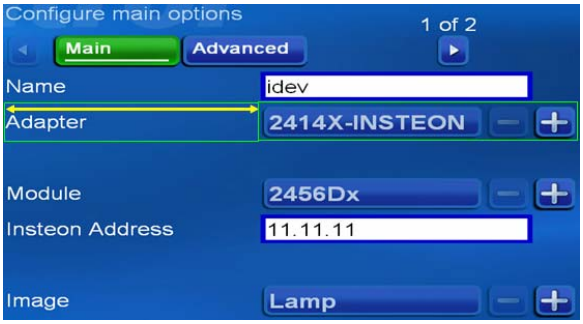
mControl uses XML variables to define how mControl user interface elements are positioned within the skin. Buttons and images are examples of mControl data elements.

The following table lists the XML variables required for a mControl skin:

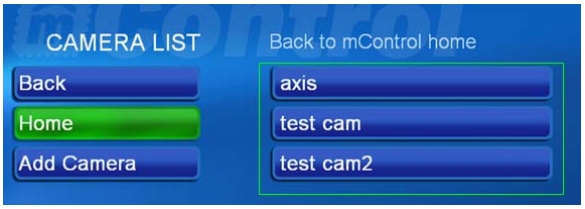
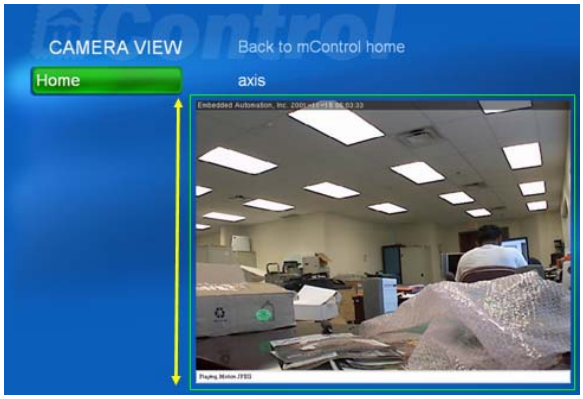
XML Variable	Description
GENERIC_LHS_YOFFSET	The space between the top of each left hand side buttons relative to each other.
GENERIC_LHS_TOP	The space between the top of the left hand side buttons and the top of the page. 

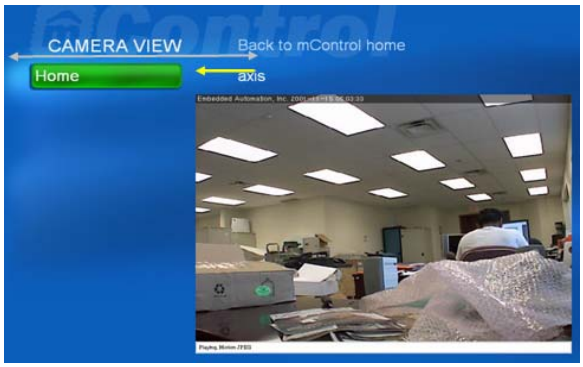
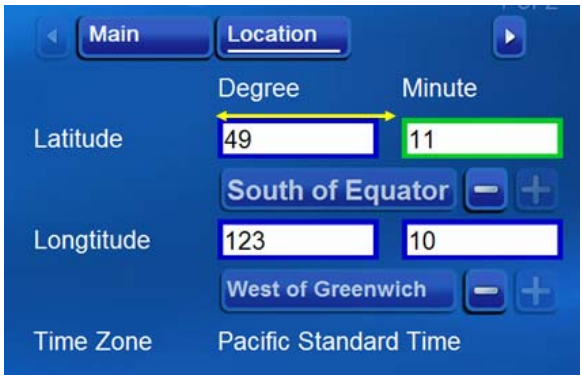
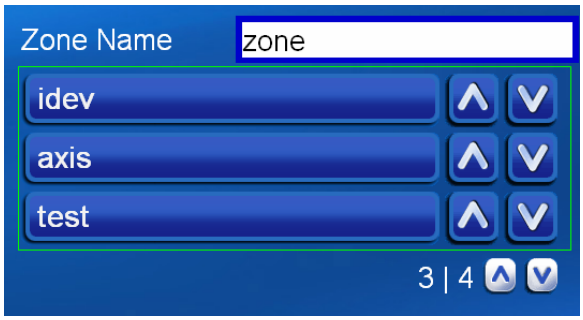
XML Variable	Description
GENERIC_LHS_LEFT	The space between the left side of the page to the left hand side buttons.
GENERIC_MAIN_TOP	The space between the top of the page and the elements displayed.
GENERIC_MAIN_YOFFSET	The space between the top of one element to the top of the next element. 

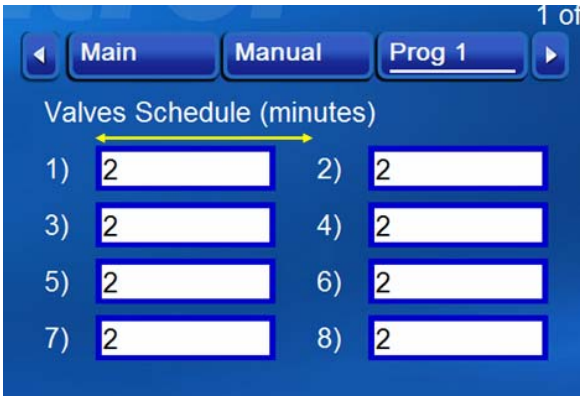
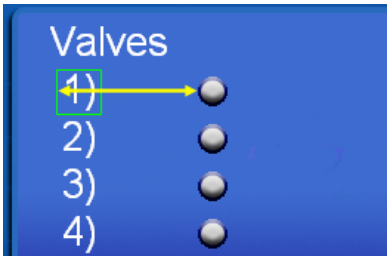
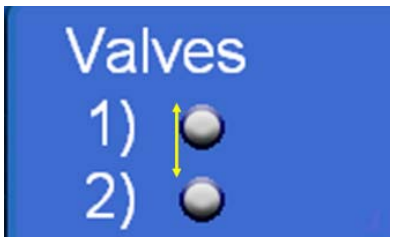
XML Variable	Description
GENERIC_MAIN_LEFT	The space between the left side of the page to the elements displayed. 
GENERIC_MAIN_XOFFSET	The space between MAIN_XLEFT and the element to be displayed. The elements that are displayed on the right side of the Settings View are relative to their order (left to right) and the MAIN_XOFFSET value.
SPACER	Generic variable used to place space between items on the page. 

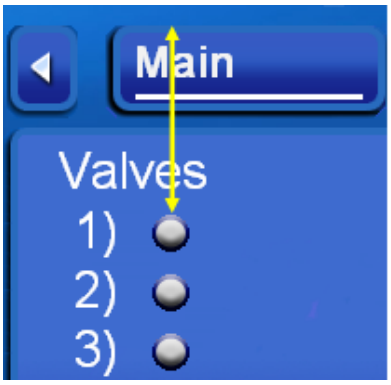
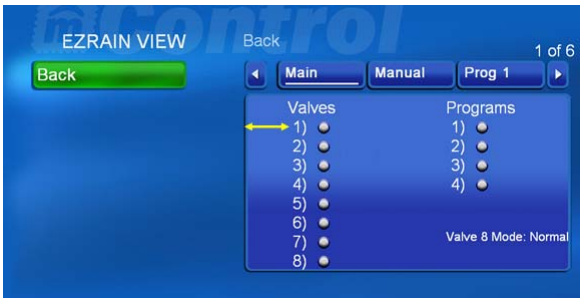
XML Variable	Description
GENERIC_SCROLL_OFFSET	The height of each row inside scrollable list objects.
GENERIC_SP_WIDTH	The width of each set point text element. 
GENERIC_TEXT_WIDTH	The space between the left side of the text labels and the left side of the elements. 
MENU_SPACER	The space between the right end of MAIN_XLEFT to the beginning of the menu item.

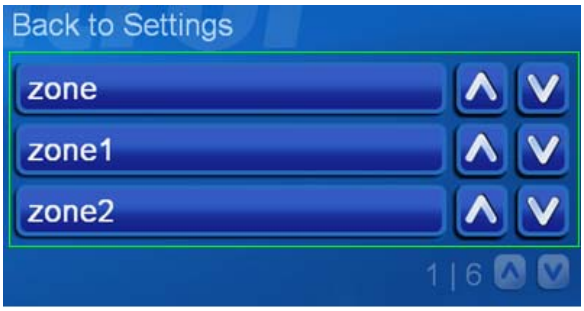
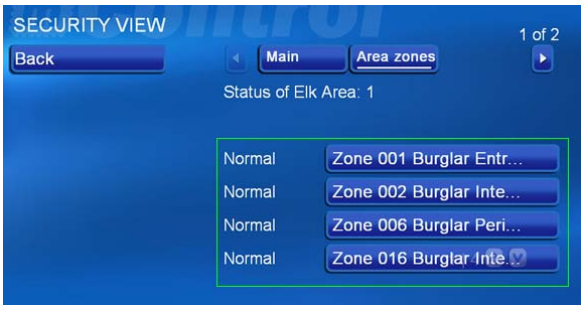
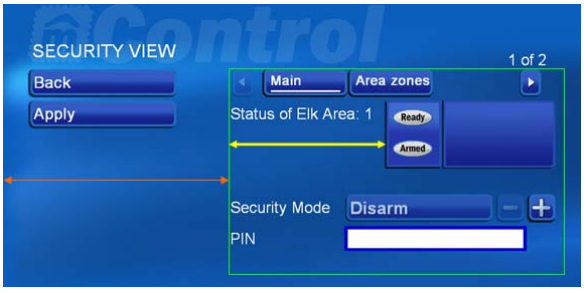
XML Variable	Description
MENU_ITEMS	The number of menu items to display at once on the menu. The MENU_ITEM_WIDTH must be able to accommodate the number of items on menu; otherwise the some times may be hidden despite the value of MENU_ITEMS.
MENU_ITEM_WIDTH	The width of each menu item.
ACTIONLIST_ROWS	The number of items to display at once in the Macro Details View. It affects both the number of triggers and actions.

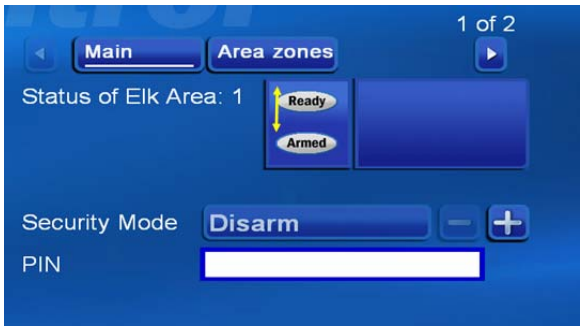
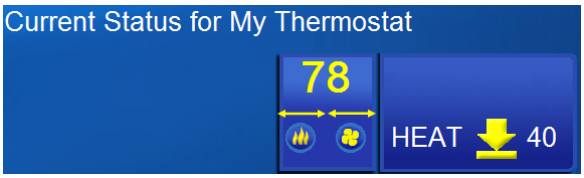
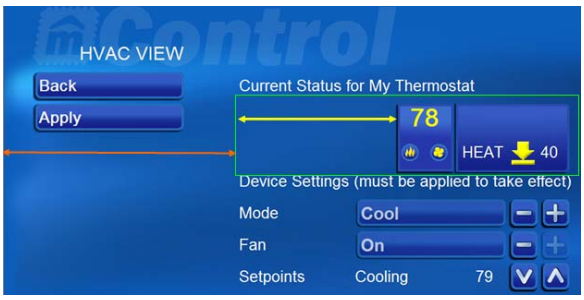
XML Variable	Description
AUTOMATION_ROWS	The number of macros to display at once in the Automation View.
CAMLIST_ROWS	The number of cameras to display at once in the Camera List View. 
CAMVIEW_HEIGHT	The height of the displayed camera image area. The displayed image can be smaller than the displayed image area (as shown in green) but cannot be bigger than the displayed image area. 

XML Variable	Description
CAMVIEW_SPACER	This moves the camera display area to the left edge of the screen. (Grey arrow represents the Generic_Main_Left) 
CONFIG_MINITAP_SPACER	Spacer for input controls on configuration page. 
EDITZONE_ROWS	The number of devices to display on the Edit Zone View. 

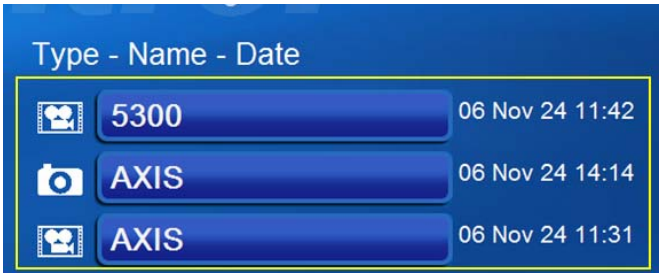
XML Variable	Description
EZRAIN_MINITAP_SPACER	The number of cameras to display at once in the Camera List View. 
EZRAIN_SPACER	The space from the left side of the number label to the left side of the valve icon. 
EZRAIN_VALVE_YOFFSET	The distance between each valve status indicator (top-to-top). 

XML Variable	Description
EZRAIN_VALVE_TOP	The space between from MAIN_YTOP to the top of the first valve icon. 
EZRAIN_VALVE_LEFT	The width of the first status panel and the text of EZRain. 
IRLIST_ROWS	The number of IR commands/adapters to display at once in the IR List View.

XML Variable	Description
MANAGEZONE_ROWS	The number of zones to display at once in the Manage Zones View. 
SECURITY_ROWS	The number of Elk security zones to display at once in the Security View 
SECURITY_STATUS_LEFT	The space between MAIN_XLEFT (orange) to the status panel of ELK in the Elk View. 

XML Variable	Description
SECURITY_STATUS_WIDTH	The width of the first status panel in the status area of Security View.
SECURITY_STATUS_TOP	The space between the top of the "Ready" icon to the "Armed" icon 
HVAC_STATUS_WIDTH	The width for each HVAC status indicator. 
HVAC_STATUS_LEFT	The space between MAIN_XLEFT (orange) to the status panel of HVAC in the HVAC View. 

XML Variable	Description
VIEWZONE_MAIN_YOFFSET	The distance between each device item in the zone view page.
VIEWZONE_MAIN_LEFT	The space between the left side of the page to the beginning of the elements in the Zone View.
VIEWZONE_MAIN_ROWS	The number of devices to display at once in the Zone View (home) page.

XML Variable	Description
VIEWZONE_LHS_ROWS	The number of zones to display at once in the Zone View (home) page.
CAMRECORD_ROWS	The number of media items to display at once in the Camera Media. 

Version History

v2.1 – released February 2008

Issue #	Description
742, 811, 962, 1031, 1035, 1101, 1146, 1188, 1189, 1208, 1258, 1263, 1264, 1265, 1266, 1267, 1268, 1308, 1317, 1319, 1320, 1321, 1324, 1325, 1327	Enhancements to IP Camera support, including: ▪ The ability to view and record cameras on Vista Media Centers and v2 Media Center Extenders, including live streams at the maximum frames per second the camera can provide (tested up to 30fps on Axis and Linksys) ▪ Support for Linksys WVC54GCA and WVC200 cameras ▪ Support for Panasonic BL-C111, BL-C131, BB-HCM515, BB-HCM511 and BB-HCM531A models ▪ Support for Axis Servers
1028, 1225, 1323, 1326	New "generic" driver to allow control of serial and IP devices, in particular audio/visual components. Each device type can be captured within an XML file and once defined can be used as an mControl device and macro actions.
	New Windows SideShow gadget
	New mControl Compact Framework (client library for Windows CE)
983, 1163, 1173, 1220, 1272, 1304	Windows Home Server (WHS) support. New mControl Add-In for Windows Home Server (WHS) includes WHS-specific installation system and WHS console tabs for mControl Editor and mControl Service Manager.
544, 1073, 1132, 1157, 1331	Multi-language support option. Languages supported will include: Arabic, Chinese (Simplified), Chinese (Traditional), Dutch, French (CDN), French (EU), German, Italian, Portuguese (EU), Spanish (EU)
1032, 1033, 1046, 1048, 1089, 1102, 1110, 1111, 1114, 1128, 1135, 1136, 1144, 1180, 1249, 1274, 1287, 1340, 1341	Improvements to the Vista Media Center interface, including: ▪ Vista Media Center displays message if mControl Service is unavailable ▪ Security page now obfuscates code entry ▪ Security page now provides keypad entry through virtual keyboard ▪ Devices within a 1-2 device zone are now never hidden ▪ Improved navigation, with some zone persistence ▪ Ability to view video in background
1049, 1054, 1134, 1140, 1141, 1142, 1207, 1237, 1255, 1288, 1303, 1328	Greatly expanded Mobile client which now allows viewing and control of cameras, security systems, thermostats and mControl macros. Also works on other platforms including iPhone/iTouch.

v2.1 – released February 2008 (continued)

Issue #	Description
1107, 1109, 1015, 1112, 1152, 1202, 1253, 1254, 1257	Expanded integration with Security Systems, including: ▪ Ability to run Elk tasks, perform Elk keypad function or control Elk outputs within mControl macros ▪ Ability to view and control thermostats (e.g, Aprilaire, HAI, etc.) interfaced to Elk-M1 systems ▪ Ability to use zone status changes to trigger mControl macros (e.g., Zone 2 equals violated)
183, 957, 1133, 1149, 1170, 1250, 1262, 1281, 1283	Revamped mControl Editor which allows for drag-and-drop management of mControl Zones/Devices and Macros.
837, 1099, 1100, 1212, 1275, 1293, 1294	INSTEON protocol enhancements, including: ▪ Initial release of the mControl INSTEON Utility ▪ Support for new INSTEON thermostat (Venstar) ▪ Preliminary support for EZIOxx devices ▪ Proper button display for INSTEON multi-level devices (e.g., dimmers) ▪ Message throttling to mitigate INSTEON adapter send/receive collisions ▪ Improved communication support for devices requiring multiple hops in INSTEON mesh network ▪ Improved handling of clean-up messaging after a group command
1158, 1159, 1250	Revamped mControl Service Controller that allows configuration of adapters, including support for non-native mControl drivers (i.e., from DDK developers), in addition to basic service stop, start and restart functionality.
988, 1216, 1270, 1271, 1298, 1299, 1300, 1301, 1302	Revamped mControl v2 Driver Development Kit (DDK) and related infrastructure changes to support custom protocols, adapters, modules, commands and properties. Using the DDK, our partners Tekniska Byran have been able to implement a driver for the KNX protocol.
98, 147, 148, 539, 542, 586, 917, 967, 986, 1030, 1034, 1036, 1067, 1068, 1069, 1087, 1088, 1097, 1098, 1108, 1120, 1121, 1122, 1123, 1124, 1125, 1126, 1127, 1129, 1131, 1137, 1139, 1145, 1147, 1150, 1153, 1154, 1156, 1165, 1167, 1168, 1169, 1171, 1174, 1175, 1177, 1178, 1183, 1195, 1197, 1198, 1199, 1203, 1206, 1209, 1210, 1213, 1217, 1228, 1230, 1231, 1234, 1235, 1236, 1239, 1241, 1242, 1243, 1245, 1246, 1247, 1251, 1252, 1256, 1259, 1260, 1261, 1273, 1276, 1277, 1278, 1279, 1282, 1284, 1289, 1291, 1296, 1306, 1311, 1312, 1316, 1322, 1334, 1335, 1336, 1338, 1339	Many general enhancements to mControl including minor enhancements, bug fixes and user documentation, including: ▪ Driver for Aprilaire thermostats ▪ Added infrastructure to allow co-branding of mControl ▪ Ability to start, pause and stop mControl macros - with live status updates of macro run status ▪ Fixed External Events support in mControl Software Developer Kit (SDK) ▪ Fully Vista-compliant installer, compatible with User Account Control (UAC) ▪ Integration with CasaTunes

v2.00 – released May 2007

Issue #	Description
973, 1001, 1006, 1026, 1050, 1060, 1065, 1080	New high-fidelity user interface for Microsoft Vista Media Center. The interface is written in Media Center Markup Language (MCML) – the native user interface language of Vista Media Center – and provides the View Zone screen and detailed view screens for HVAC, Security, Camera and Irrigation devices.
87, 364, 933, 966, 971, 972, 968, 969, 979, 992, 993, 994, 995, 1020, 1021	Enhanced macro functionality: ▪ Support for conditional triggering. Each trigger now has one or more conditions, which must all be true for the trigger to be activated. ▪ New macro conditions including “Device Status”, “Recurring Timer" and “Time Range”. ▪ Expanded “One Time” condition to allow for dates in the future.
843, 849, 895, 998, 1002, 1044, 1045	Support for additional devices and technologies: ▪ Support for Rako Controls ▪ Support for DSC PowerSeries Security Systems (via IT100 module) ▪ Support for Proliphix IP Thermostats ▪ Enhancement to allow receiving IR signal via USB-UIRT
959, 984, 987, 1017, 1055, 1058, 1066	INSTEON protocol enhancements, including: ▪ Support for Power Line Modem 2412U (USB) and 2412S (Serial) adapter ▪ Support for SimpleHomeNet EZBridge (IP to INSTEON/X10 Bridge) ▪ Support of PowerLinc 2814U (PC Timer System)
201, 227, 375, 385, 413, 440, 484, 784, 948, 964, 985, 1000, 1012, 1013, 1014, 1037, 1039, 1042, 1064, 1070, 1079, 1081	X10 protocol enhancements, including: ▪ Support for the CM19A (USB) Adapter ▪ Support for the PowerLinc 1132CU Controller ▪ Improved handling of serial (e.g., CM11A) messaging ▪ Improved handling of extended X10 commands for Leviton and X10 devices (e.g., LM11)
10, 47, 63, 173, 389, 502, 657, 886, 929, 943, 961	Enhancements to the mControl (HTML-based) user interface, which is used by Internet Explorer and MCE 2005: ▪ New midnight skin which is optimized for lower resolution screens, in particular UMPC devices ▪ Improved handling of long Zone and Device names ▪ Improved and automated method of handling client screen sizes
975, 996, 1010	Driver Development Kit (DDK) to allow developers to write their own protocol plug-ins.
949, 963, 965, 977, 981, 999, 1005, 1009, 1016, 1018, 1019, 1025, 1061	Enhancements to various components to support Microsoft Vista ▪ Z-Wave modifications ▪ mControl Installer and 3rd party components
960	New Diagnostic page to assist trouble-shooting of mControl.
38, 79, 192, 217, 263, 272, 289, 305, 344, 381, 403, 466, 469, 518, 522, 525, 568, 570, 578, 580, 588, 603, 623, 632, 705, 748, 756, 762, 763, 767, 777, 779, 901, 918, 920, 930, 950, 953, 954, 970, 974, 990, 991, 997, 1007, 1008, 1011, 1029, 1038, 1040, 1043, 1047, 1052, 1053, 1057, 1059, 1063, 1076, 1077	Many general enhancements to mControl including: ▪ Minor enhancements and bug fixes ▪ User documentation

v1.70 – released January 2007

Issue #	Description
220, 224, 244, 248, 325, 338, 511, 532, 537, 575, 755, 761, 773, 791, 839, 856, 857, 858, 859, 860, 868, 871, 874, 881, 883, 885, 892, 940, 942	Enhanced security camera support, including: ▪ Support for Panasonic cameras (BB-HCM331) ▪ Confirmed support for D-Link DCS-3220 and DCS-6620 series of cameras ▪ Enhanced Camera View page provides capability to take a snapshot, record a video and, if camera allows, perform pan-tilt-zoom functionality ▪ New macro trigger: On Camera Motion (supported on Axis cameras) ▪ New macro action: Record video (user-definable frame rate and duration) ▪ New macro action: Take snapshot (user-definable count) ▪ New Camera Media page allows viewing of snapshots and videos, sorted by date/time, media type or camera ▪ View camera snapshots and videos within Media Center
743, 869, 870, 876, 893, 894, 897, 898, 899	Enhanced security system support, including: ▪ Support for DSC PowerSeries Security Systems (via PC5401 module) ▪ Support for Honeywell Ademco Security Systems ▪ Touch screen friendly numeric entry buttons for arming/disarming
253, 771, 780, 785, 865, 891, 910, 923	Enhanced device support, including: ▪ Support for HAI RC Thermostats ▪ Support for USB UIRT IR Receiver/Blaster
846, 889	Z-Wave protocol enhancements, including: ▪ Z-Wave Adapter Utility has been improved to display Z-Wave device information ▪ Improved robustness to manage lost connections
119, 124, 906	X10 protocol enhancements, including: ▪ Universal Module (UM506) support ▪ Enhancements to CM17 (Firecracker) communications
191, 383, 392, 778, 851, 907	User Interface enhancements, including: ▪ Support for SnapStream's BeyondMedia media center ▪ New Windows Mobile interface provides view and control of mControl devices ▪ Button like behavior on devices
900	Enhanced voice recognition capabilities (using One Voice Technologies' Media Center Communicator) ▪ mControl macros can now be triggered by voice command
125, 534, 818, 828, 830, 831, 832, 911, 912, 913, 931, 932, 939	Enhanced macro functionality ▪ Ability to specify images for each macro ▪ Ability to order macros within a zone ▪ Set durations for macro actions to allow for deterministic macro timing
213, 223, 758, 764, 807, 808, 815, 827, 838, 842, 847, 848, 850, 864, 872, 873, 890, 902, 905, 921, 922, 925	Many general enhancements to mControl including: ▪ User interface ▪ Installation process ▪ User Manual

v1.60 – released September 2006

Issue #	Description
799, 801	One Voice Technology (voice recognition) integration. Source code and grammar file is provided to allow functionality extensions by users.
	New Software Development Kit (SDK) to allow developers to create applications which can interface to mControl. The SDK includes: ▪ mControl SDK manual with detailed information on the mControl application programming interface (API) ▪ Sample source code projects which interface programmatically with mControl, including macro operation and event handling
814, 820, 821	New user interface choices and related documentation: ▪ New "grey skin" which provides a more condensed view including more zones and devices in the View Zone page ▪ Documentation to allow customization of user interfaces
786, 787, 788, 789, 790, 792, 793	Enhanced macro functionality including: ▪ Capability to trigger on Elk security alarms or arming/disarming ▪ Capability to set HVAC values within a macro action
800	Support of Global Cache RG-1 (long-range IR receiver) which can be used for macro triggering.
768, 770, 776, 823	Enhanced security camera support including: ▪ Static JPG image viewing with auto-refresh (instead of video stream)
795, 796	Enhanced X10 support including: ▪ Better handling of X10 input for status updates and macro triggers ▪ Improvements to X10 message handling for HVAC operations
772, 775, 782, 817, 831	Many general enhancements to mControl including: ▪ User interface ▪ Installation process ▪ User Manual

v1.50 – released June 2006

Issue #	Description
141, 171, 252, 273, 390, 546, 551, 558, 563, 564, 565, 566, 567, 569, 573, 574, 579, 590, 591, 592, 595, 596, 597, 598, 599, 600, 601, 602, 608, 609, 611, 614, 619, 620, 631, 633, 634, 635, 637, 642, 708, 710, 711, 716, 721, 724, 726, 728, 729, 736, 737	Enhanced macro functionality including: ▪ Macros now allow for multiple triggers ▪ Time-based triggers/actions allow for randomization to prevent detection ▪ Additional triggers have been added, including: • IR Event – trigger on recognized IR message • MCE Event – trigger on Media Center event (e.g., DVD Play) • One Time – trigger once at a specific time • Device (Group) – trigger on incoming INSTEON group message ▪ Additional actions have been added, including: • Macro Action – call another macro • Send Mail Action – send an email • External Action – launch an external application
204, 562, 605, 606, 660, 664, 665, 666, 669, 672, 674, 675, 676, 694, 695, 701	Support for Elk Security's M1 security system, including the ability to: ▪ View the status of each zone ▪ Arm and disarm the system
654, 656, 680, 681, 683, 688, 703, 706	Support for EZRain Irrigation System, including the ability to: ▪ View the status of the EZRain Irrigation System ▪ Program times for each valve ▪ Ability to start the EZRain device with mControl macros
176, 246, 264, 492, 497, 498, 639, 653, 741	Enhanced security camera support including: ▪ Support for Axis cameras ▪ Support for host.domain.com addressing ▪ Infrastructure to add cameras not currently supported by mControl
581, 589, 687, 689	Enhanced user-interface infrastructure, which allows for: ▪ Support for alternate screen sizes, in particular, Ultra-mobile PC (UMPC) screen sizes – including Samsung Q1
491, 533, 584, 641, 655, 691, 698	Enhanced support of Z-Wave protocol, including: ▪ Greatly enhanced Z-Wave Adapter Utility which supports replacement/deletion of failed nodes, Secondary/Primary adapter role management and device polling management ▪ Support for the Intermatic USB adapter
064, 237, 332, 349, 487, 509, 536, 545, 735, 745, 747, 749	Enhanced support of INSTEON protocol, including: ▪ Support for latest version of Powerline Controllers (PLCs)
45, 157, 180, 207, 301, 535	Enhanced support of X10 protocol, including: ▪ Support for the W800RF32A X10 RF receiver. The W800RF32A receiver allows direct receipt of wireless X10 messages. ▪ Support for Leviton modules which utilize "Extended X10" messaging. This support provides for 2-way communications, including status updates and macro triggering and enhanced dim/brighten control.
085, 099, 123, 159, 202, 271, 279, 283, 284, 285, 286, 290, 294, 298, 316, 369, 371, 384, 396, 457, 474, 494, 501, 514, 521, 541, 550, 552, 553, 554, 559, 576, 577, 593, 594, 613, 616, 621, 627, 629, 643, 678, 679, 680, 690, 692, 699, 700, 707, 709, 718, 722, 723, 730	Many general enhancements to mControl including: ▪ mControl directory infrastructure ▪ Installation process ▪ User Manual

v1.40 – released March 2006

Issue #	Description
209, 215, 226, 387, 393, 401, 447, 458, 460, 519	INSTEON enhancements, including: ▪ Confirmed support of ICON Switches (INSTEON 2876DB & 2876SB) ▪ Enhanced support to allow for macro-triggering and screen updates for SwitchLinc and KeypadLinc ▪ Added support for Preset Dim and Ramp Rates ▪ Improved robustness for receiving X10 commands
28, 395, 405, 411, 412, 414, 424, 425, 426, 427, 428, 429, 430, 431, 433, 434, 436, 449, 450, 451, 452, 453, 455, 456, 461, 463, 473, 476, 479, 490, 493, 512, 517	Added support for the Z-Wave protocol and associated devices, including: ▪ Support for PC adapters operating in either primary and secondary controller mode ▪ Added support for binary (appliance) devices, multi-level/dimmable (lamp) devices and thermostats ▪ New Z-Wave Controller utility. This utility allows for convenient configuration of Z-Wave controllers. ▪ Real-time status updates as defined by polling rate ▪ Added support for Preset Dim
156, 324, 398, 404, 406, 407, 408, 409, 410, 464, 465, 468, 470, 472, 477, 481, 507, 516	Added support for RCS Thermostats, including: ▪ TXB16 X10 Thermostat ▪ TZ16 Z-Wave Thermostat
445, 467, 488	Added support for additional security cameras, specifically: ▪ D-Link DCS-900, DCS-900W, DCS-3220 and DCS-3220G cameras
402, 496	Enhanced support for CM11A/CM12 adapters to allow for the ability to receive incoming X10 messages. This functionality allows for real-time status updates, device macro triggers and thermostat support.
415, 416, 417, 419, 420, 421, 422, 438, 441, 446, 478, 508	New “mControl Editor” utility. For this version, the mControl Editor supports the following functionality: ▪ Viewing mControl Zone and Device data in a grid/tabular format ▪ Allows for easy addition, deletion and editing of Zones and Devices
513	New “mServer Service Manager” utility. This utility allows for convenient control of the mControl Automation Service.
489, 526	Enhanced IR functionality, including: ▪ Increased IR command buffer to 1300 characters ▪ Added button to allow immediate testing of learned commands
320, 357, 370, 378, 394, 397, 399, 400, 437, 442, 443, 444, 448, 471, 480, 483, 485, 486, 500, 504, 505, 515, 520	Many general enhancements including: ▪ Improved robustness ▪ Macro operation ▪ Documentation ▪ UI improvements

v1.31 – released December 2005

Issue #	Description
317,341,350, 354, 356	Improved robustness for installation, logging and copy protection, including: ▪ Installation in non-default directory or drive ▪ Size and number of log files can be set ▪ Proper version is shown in "More Programs" area of MCE ▪ Automatic upgrading of v1.1x database adds necessary fields
158,336,348	Improved robustness for editing of mControl devices, zones and related data.
323,355	Improved robustness for Macro handling, including: ▪ Will not allow selection of undefined addresses as triggers
205,206,225, 299,302,313, 329,340,343, 345,347,351, 360,361,366, 367,368,372, 373,377,380	Improved robustness related to INSTEON and X10 support, including: ▪ Elimination of spurious exception errors ▪ Improved automatic handling of plugging and unplugging of CM15A and 2414U ▪ Behavior for INSTEON devices changed to reflect expected behavior instead of X10 behavior ▪ Multiple X10 ON commands handling ▪ Devices, if linked in mControl/2414U, will update status if ControLinc, SwitchLinc or KeypadLinc also have them linked and change status ▪ Incoming and outgoing X10 messages on 2414U INSTEON adapter ▪ Improved robustness for automatic linking and unlinking of devices in PowerLinc's database

v1.30 – released November 2005

Issue #	Description
238	Confirmed support of Windows XP Media Center Edition 2005 Rollup 2
33 ,221,228, 235,236,268, 269,274,275, 280,297,307, 311,322	Enhanced Macro support, including: ▪ Support for sunrise and sunset macro triggers. Configuration allows for entry of longitude and latitude, thereby allowing mControl to calculate the sunrise and sunset for the day. Offsets can be added to control desired trigger points relative to sunrise and sunset. ▪ Greater than 6 hours for delays ▪ Enhanced error checking for incorrect macro triggers and actions
100,169,259, 277,278,296, 312,321	Added support for IR functionality, including: ▪ Support for the Global Caché Network IR Adapter, including "learning" functionality (using GC-IRL module) ▪ Support for raw Component Control Files (CCF), thereby allowing manual entry, using cut and paste, of known IR commands
90,193,203, 242,243,261, 265,266,267, 270,276,282, 287,300, 306	Enhanced configurability, including: ▪ Selectable styles (or "skins"). Default style is now non-animated Blue, to ensure optimum performance for MCE environments. ▪ Expanded XML configuration files and related documentation. Please refer to the "Configuring mControl" section of the mControl v1 (Home Edition) User Manual
94 ,133,139, 164,199,222, 236,240,262, 275, 280,295	Performance improvements, including: ▪ mControl no longer throws an exception if stopped or restarted ▪ Memory management is no longer affected by presence or absence of internet connection ▪ Performance of the mControl client, when used in conjunction with Shared View Port (SVP) is greatly improved ▪ Improved entry field validation throughout

v1.30 – released November 2005 (continued)

Issue #	Description
218,225,241, 243,249,308, 309, 310,315, 318, 319,328, 331	Enhanced support of the INSTEON protocol, including: ▪ Added automatic linking and unlinking of INSTEON devices. All devices added to mControl zones will automatically be added to the 2414U PowerLinc's memory, thereby allowing the PowerLinc to recognize the device during 2-way communications. If the device is deleted from mControl, it will be automatically removed from the PowerLinc's memory. This eliminates the need for the user to do manual linking and unlinking. ▪ Added X10 to INSTEON command translator. Entries in the mServer.exe.xml configuration file will allow incoming X10 signals to be translated into a specified INSTEON address. This is particularly useful for cases where hybrid systems exist and rely on a X10-based back-end controller and INSTEON-based lighting control. ▪ Confirmed support for 2486D (INSTEON KeypadLinc) ▪ Improved incoming X10 event handling ▪ INSTEON Adapter/Device and FAQ sections has been updated
130,177,200, 212,231,232, 233,239	Improvements to the mControl installer, including: ▪ mControl database and license are backed up (.cpy extension) ▪ Improved installation of 3rd party software (e.g., CM15A X10 drivers) ▪ Default install is for "Everyone" to ensure that mControl is visible to MCE Extenders ▪ DLLs are properly registered and loaded in .NET Global Assembly Cache
168,195,214, 216, 242	Documentation improvements, including: ▪ Provided a section which describes how to remote mControl to another PC using either Internet Explorer or as a part of the "More Programs" section of Media Center ▪ Provided a section which describes how to add mControl to the "Start Menu" of Media Center ▪ Provided a section related to Custom User and System Configuration Settings. ▪ Provided information on how to use mControl when no active Internet connection is established.

v1.20 – released September 2005

Issue #	Description
13, 67	User interface will now update, in real-time, any device status changes. These changes may have been initiated by the user, by another user on a remote client or via macro actions.
31	Added support for security cameras. Specifically, the following cameras are now supported: ▪ D-Link DCS-2100+ ▪ D-Link DCS-5300W
90,131, 179	An XML file has been created to hold device configuration information. Users may now: ▪ Create custom images for a device, using "blank.gif" ▪ Rename devices (e.g., for localization purposes) ▪ Add/remove devices from the device list
93,129, 162,187	Page Up/Down buttons are now fully implemented and are usable for touch screen applications.
132,134, 150,153, 158,159	Macro functionality has been enhanced: ▪ Bright/Dim are available as action commands ▪ Added "day" settings to allow running of a macro on specific days ▪ Timer macros are now stored properly in the mControl database ▪ Macros now reference Zones/Devices properly ▪ Finer granularity on delay action steps
137	External INSTEON device changes can be used to trigger events. **NOTE:** To avoid infinite recursion, please ensure any actions within the macro do not retrigger the same macro.
170	Configurable Dim/Bright granularity is supported for each dimmable device.
136,138, 143,145	INSTEON support enhancements, including: ▪ Successive INSTEON commands issued within a macro will now properly execute. Previously, it was possible that some commands would not be processed due to the capability of the 2414x adapter. ▪ Remote commands, for example, from a ControLinc or a SwitchLinc are now recognized by the adapter.
184,197	General usability enhancements, including: ▪ Confirmed Windows XP Home Edition support ▪ Installer has been enhanced to allow mControl installation in user selected drive and directory ▪ User no longer has to uninstall old version and install new version.

v1.11 – released on August 3, 2005

Issue #	Description
	The mControl v1 (Home Edition) User Manual, specifically the "Using mControl" section, has been updated to reflect the changes made for mControl v1 (Home Edition) release
135,136	Several enhancements to the INSTEON protocol driver including: ▪ All outgoing commands check if PowerLinc (USB) adapter is connected or disconnected, and will update the mControl database accordingly ▪ A 2 second timeout (and retry) strategy is included to ensure robust communications. ▪ Devices within the mControl database will be updated upon receipt of a corresponding event. Previously, the status change was only recorded if it was initiated by an mControl INSTEON command

v1.10 – released on July 21, 2005

Issue #	Description
10	The mControl User Interface Client is now fully supported on browsers based on Internet Explorer 6.
16, 17	Validated support for additional X10 adapters, modules, transceivers, remotes and sensors. In addition to supporting these devices within mControl, the User Manual and web site have been updated to reflect this support.
26, 65	To allow easier entry of devices, upon selecting Add Device, mControl will preload the house and adapter, based on the previous device entered.
29, 71, 82, 83, 88, 99	Improvements to the mControl User Interface Client including: ▪ Additional device images have been provided. ▪ Improved cursoring and paging within zones with many devices ▪ Improved consistency in screen names and navigation ▪ Consistent location of navigation and add/delete/edit buttons ▪ Ability to enable/disable Macros with single check box ▪ Error screens with recovery suggestions
54, 57	Increased robustness to CM11A adapter interface. A command retry strategy has been added to ensure that all commands are sent.
61	Older versions of mControl database are now automatically converted to latest version.
77, 78, 106	Managed deletions of Devices and Zones: ▪ A warning is given upon Device Deletion to alert that related Macro Actions may be affected. If confirmed, all associated Macros Actions are deleted. ▪ A warning is given upon Zone Deletion to alert that underlying Devices and associated Macros and their Actions may be affected. If confirmed, all underlying Devices are now marked as deleted and all associated Macros and their Actions are deleted.
101	User-selectable logging as defined in "`mServer.exe.config`" configuration file. The default setting is ALL.
102	mControl now supports COM1 through COM4 ports for all serial-based adapters.
103	Support for INSTEON protocol, specifically the 2414 PowerLinc adapter. mControl allows sending commands to both INSTEON and X10 modules. In addition, mControl will process commands received on this adapter. Please refer to the "Supported Automation" section of this manual for more details.
104	mControl now supports receiving X10 messages using a CM15A adapter. Received power line and RF commands can be processed to update the database or launch Device Macros. Please refer to the "Supported Automation" section of this manual for more details.

v1.00 (Release Candidate 1) – released on June 13, 2005

Issue #	Description
15, 34, 48	mControl Automation Service now provides user interface screens to mControl User Interface Client. **IIS is no longer required.**
40	Updated software interface for X10 CM15A ActiveHome Interface (USB)
81, 82, 84, 91, 93	Improvements to mControl User Interface Client including: ▪ User will be prompted for saving edits if Back or Home button are pressed ▪ Current location or function is displayed over mControl watermark ▪ Home button for easy return to Zone View screen ▪ Amalgamation of the Create and Edit buttons ▪ Use of mControl logo throughout ▪ Mouse functionality matches remote control functionality

Known Issues

All of the below-mentioned issues will be resolved in future versions of mControl:

Issue #	Description
95	If the mControl Automation Service is not running the mControl User Interface Client does not come up on MCE or IE. There is a “Page Not Found” error. **NOTE:** Restart mControl Automation Service
79	It is possible to create non-unique device name and zone name combinations. For example, it is possible to create two devices with the same name within a zone or devices with the same address. **NOTE:** Please ensure that addresses, device names and zones are unique.
69	First time entry in to mControl may take >30 seconds. **NOTE:** Subsequent entries will be almost immediate.
525	It is possible to change select set points outside the temperature range. **NOTE:** The TXB16 and TZ16 will not accept set points outside of the range of the control range.
527	Due to the way the 2414U INSTEON adapter handles incoming X10 commands, TXB16 status display may be incorrect. **NOTE:** Consider using CM11A interface

Error Management

The following summarizes mControl error conditions and suggested actions:

Errors	Description
▪ AUTOMATION SERVER IS NOT RUNNING ▪ PAGE NOT FOUND ▪ SERVER IS NOT STARTED YET	Please ensure that the mControl Automation Service is running. Use Control Panel's Administrative Tools and select Services. Within the Services manager, cursor to the "mHome Automation Server". If this service is stopped, then right-click to 'Start' or press the play button on the tool bar.
▪ NO ZONES IN DATABASE	In order to create a macro, there must be a minimum of one zone in the system. Please go back and enter a zone before continuing with the automation controls.
▪ SERIAL PORT TIMEOUT EXCEPTION	Please ensure that the CM11A/CM12U adapter is connected to your PC.
▪ MACRO NOT READY ▪ MACRO ALREADY LOADED	Macro failed. Please retry or review log files.
▪ MACRO ALREADY RUNNING	Macro failed. An instance of this macro is already running.
▪ PROTECTION FAILED ▪ LICENSE FILE NOT FOUND ▪ VALIDATION OF MODULE FAILED ▪ DEMO LICENSE HAS EXPIRED ▪ LICENSE FILE IS TAMPERED WITH ▪ PROTECTION WRONG TAG ▪ SYSTEM DATE IS TAMPERED WITH	mControl license has expired, is missing or has been damaged. Please contact support@embeddedautomation for further assistance.
▪ SYSTEM ERROR	mControl has encountered an unknown error, please restart mControl and try again.

Frequently Asked Questions (FAQs)

Installation and Start-up

I receive an "Unable to Display Page" error when I try to start mControl from Windows Media Center. The message says "Media Center is unable to load the page http://localhost:29990/Default.aspx."

This is because the mControl Automation Service is not running. Please 'Start' the mControl Automation Service, by going to the Control Panel's Administrative Tools and selecting Services. Within the Services manager, cursor to the "mHome Automation Service". Right-click to 'Start' or press the play button on the tool bar.

Can I use Internet Explorer to run mControl?

Yes, mControl will run on Internet Explorer. To start mControl type http://localhost:29990/ into the Internet Explorer address area.

How do I access mControl from another Windows XP Media Center Edition 2005 machine?

mControl consists of two parts: (a) mControl Automation Service and (b) mControl User Interface Client(s). By default, mControl installs both of these on the same machine. Since the mControl Automation Service supports multiple clients, you can easily add a MCE client(s). (This is particularly useful if you've installed mControl on a Windows XP Professional machine.)

Simply copy the mControl.mcl file located in the "`C:\Program Files\Embedded Automation\mControl`" directory to the new client machine's "`C:\Documents and Settings\<user of your choice>\Start Menu\Programs\Accessories\Media Center\Media Center Programs`" directory. Edit the file using Notepad to modify the URL, replacing 'localhost' with the name of the new client machine. For example, if your mControl Automation Service machine is called 'MyServer, you would change the URL setting to "http://MyServer:29990/Default.aspx". Once the file has been modified, you will be able to access it from the "More Programs" area of the client machine.

I get a "The trial version of mControl has expired" message. What happened?

The mControl software you are using has been provided for limited time use. This is governed by a form of copy protection. Either one of three things happened to cause the "The trial version of mControl has expired" message: (a) the 30 days you had to review mControl has passed, (b) the mControl license has become damaged, or (c) the system date has been changed.

Please note: if your license has expired, all navigation and viewing functionality will still be available; however, all device control and automation will be disabled.

You can purchase mControl from the Embedded Automation web store.

X10 Automation

I don't see the X10 module I would like to control in the module list on the "Edit Device" screen.

You can add, remove or rename devices by making changes to the “mServer.exe.xml” file. Please refer to the “Configuring Devices” section of the mControl v2 (Home Edition) User Manual.

I plugged in my CM15A X10 Adapter and Windows asked for driver files. I pressed ‘Cancel’ but now I see unknown devices (denoted by yellow question marks) in Device Manager. What should I do?

To fix this simply install mControl. mControl will ask to install the required drivers for the CM15A X10 Adapter.

Z-wave Automation

My Z-wave device does not enroll – what is going wrong?

Please ensure that you have previously un-enrolled the device. If it was associated with a different Z-Wave network, it will not enroll.

INSTEON Automation

Does mControl work with SwitchLincs?

mControl can turn on, turn off, dim and brighten SwitchLincs.

In addition, mControl can sense paddle presses made by users. Paddle presses can also be used as triggers for macros. For more information on how to use paddle presses see the INSTEON section of the mControl v2 (Home Edition) User Manual.

mControl does not appear to receive device triggers, what could be happening? The 2414U INSTEON adapter LED blinks On and Off about every 1 second, what could be happening?

The memory in the 2414U INSTEON Adapter’s memory may be “corrupt”. Please email support@embeddedautomation.com – we can provide a utility to revert the 2414U to factory conditions.

Elk Security

I don't get the proper status from my Elk security system – what could be going wrong?

Please confirm that you have properly set the communication port and baud rate settings in the mServer.exe.xml configuration file. To check your Elk security baud rate settings refer to Menu 07 (Global System Definitions).

Also, confirm that you have selected the proper area (partition) to view.

HVAC

Why does the mControl user interface not display the TXB16 HVAC device status even though I added the device with correct address?

The TXB16 X10 HVAC requires about several minutes for communication as several X10 commands are sent to and from the device. When the device is initially added, please do not send any other INSTEON or X10 commands to allow the HVAC device to communicate successfully with mControl.

Support

Log Files

Log files contain journalized information of mControl operation, informational messages and errors. Log files can be found in the following folder: `C:\Program Files\Embedded Automation\mControl\logs`.

Log files are named `mControl<xxx>.log`, where <xxx> represents a numeric value. The most recent log file is `mControl000.log`. If this log is full, it is renamed to `mControl001.log` and a new `mControl000.log` is opened for use. Up to 10 log files can exists, named incrementally, via this cascading copying progress.

Log files are also available for the MCE Add-in. These log files can be found in the following folder: `C:\Program Files\Embedded Automation\mControl\logs`. Log files for the MCE Add-in are named `MSASAddIn<xxx>.log`, where <xxx> represents a numeric value. As with mControl log files, these files are enumerated similarly.

Diagnostics

Use http://localhost:29990/diagnostic.aspx to generate a report of information related to your mControl installation.

Contact Us

Send us an email to: support@embeddedautomation.com or go to the Support page at www.embeddedautomation.com.

Participate in the forum: www.embeddedautomation.com/forum